

Redevelopment of the River Club, Observatory, Cape Town

Pre-Application BAR

Report Prepared for

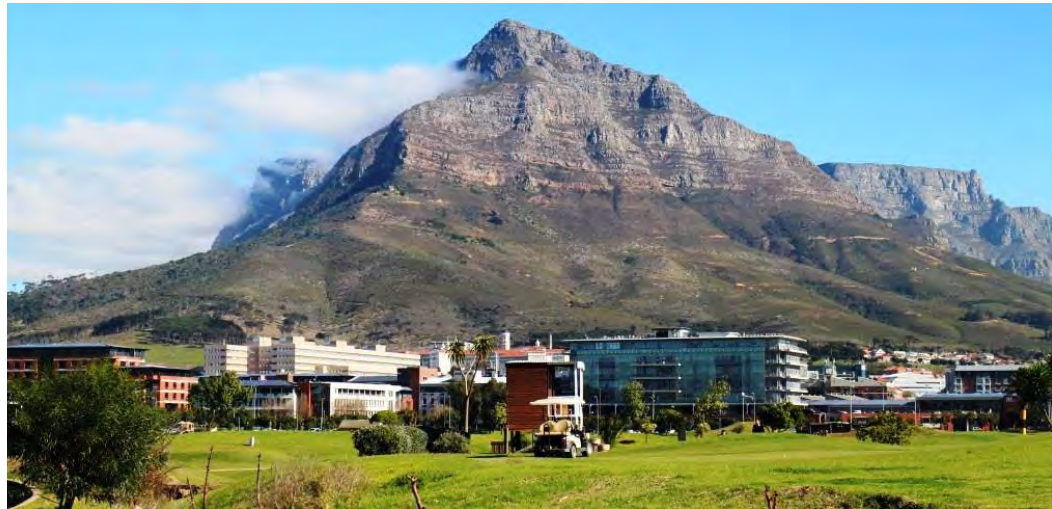
Liesbeek Leisure Properties Trust

Report Number 478320

HWC Case No.: 15112504WD1217E

DEA&DP Ref. No.: 16/3/3/6/7/2/A7/17/3104/16

DWS Ref. No.: 16/2/7/G22/A/11 and WU9026 River Club



Report Prepared by

The logo for srk consulting, featuring a stylized orange and grey graphic to the left of the text 'srk consulting'.

July 2019

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SRK Project Number 478320

July 2019

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**BASIC ASSESSMENT REPORT
IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107
OF 1998) AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS
AMENDED)**

October 2017

PROJECT TITLE

The Redevelopment of the River Club

July 2019

REPORT TYPE CATEGORY	REPORT REFERENCE NUMBER	DATE OF REPORT
Notice of Intent	16/3/3/6/7/2/A7/17/3104/16	19/04/2016
Draft Scoping Report	16/3/3/6/7/2/A7/17/3104/16	02/08/2016
Revised Draft Scoping Report	16/3/3/6/7/2/A7/17/3104/16	09/01/2017
Pre-Application Basic Assessment Report (BAR) ¹	16/3/3/6/7/2/A7/17/3104/16	11 July 2019
Draft BAR ²	N/A	N/A
Final BAR ³ or, if applicable BAR ⁴	N/A	N/A

Notes:

1. In terms of Regulation 40(3) potential or registered interested and affected parties, including the Competent Authority, may be provided with an opportunity to comment on the Basic Assessment Report prior to submission of the application but must again be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. The Basic Assessment Report released for comment prior to submission of the application is referred to as the "Pre-Application Basic Assessment Report". The Basic Assessment Report made available for comment after submission of the application is referred to as the "Draft Basic Assessment Report". The Basic Assessment Report together with all the comments received on the report which is submitted to the Competent Authority for decision-making is referred to as the "Final Basic Assessment Report".
2. In terms of Regulation 19(1)(b) if significant changes have been made or significant new information has been added to the Draft Basic Assessment Report, which changes or information was not contained in the Draft Basic Assessment Report consulted on during the initial public participation process, then a Final Basic Assessment Report will not be submitted, but rather a "Revised Basic Assessment Report", which must be subjected to another public participation process of at least 30 days, must be submitted to the Competent Authority together with all the comments received.

DEPARTMENTAL REFERENCE NUMBER(S)

Pre-application reference number:	16/3/3/6/7/2/A7/17/3104/16
File reference number (EIA):	To be provided
NEAS reference number (EIA):	To be provided
File reference number (Waste):	N/A
NEAS reference number (Waste):	N/A
File reference number (Air Quality):	N/A
NEAS reference number (Air Quality):	N/A
File reference number (Water):	16/2/7/G22/A/11 and WU9026 River Club
NEAS reference number (Other):	None provided

CONTENT AND GENERAL REQUIREMENTS

Note that:

- The content of the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), any subsequent Circulars, and guidelines must be taken into account when completing this Basic Assessment Report Form.
- This Basic Assessment Report is the standard report format which, in terms of Regulation 16(3) of the EIA Regulations, 2014 (as amended) must be used in all instances when preparing a Basic Assessment Report for Basic Assessment applications for an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the EIA Regulations, 2014 (as amended) and/or a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM:WA"), and/or an atmospheric emission licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA") when the Western Cape Government: Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority/Licensing Authority.
- This report form is current as of October 2017. It is the responsibility of the Applicant/ Environmental Assessment Practitioner ("EAP") to ascertain whether subsequent versions of the report form have been released by the Department. Visit the Department's website at <http://www.westerncape.gov.za/eadp> to check for the latest version of this checklist.
- The required information must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The tables may be expanded where necessary.
- The use of "not applicable" in the report must be done with circumspection. All applicable sections of this report form must be completed. Where "not applicable" is used, this may result in the refusal of the application.
- While the different sections of the report form only provide space for provision of information related to one alternative, if more than one feasible and reasonable alternative is considered, the relevant section must be copied and completed for each alternative.
- Unless protected by law, all information contained in, and attached to this report, will become public information on receipt by the competent authority. If information is not submitted with this report due to such information being protected by law, the applicant and/or EAP must declare such non-disclosure and provide the reasons for believing that the information is protected.
- Unless otherwise indicated by the Department, one hard copy and one electronic copy of this report must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
- This Report must be submitted to the Department and the contact details for doing so are provided below.
- Where this Department is also identified as the Licencing Authority to decide applications under NEM:WA or NEM:AQA, the submission of the Report must also be made as follows, for-
 - Waste management licence applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (tel: 021-483-2756 and fax: 021-483-4425) at the same postal address as the Cape Town Office.
 - Atmospheric emissions licence applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licencing Authority or this Department's Air Quality Management Directorate (tel: 021 483 2798 and fax: 021 483 3254) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE		GEORGE REGIONAL OFFICE
REGION 1 (City of Cape Town & West Coast District)	REGION 2 (Cape Winelands District & Overberg District)	REGION 3 (Central Karoo District & Eden District)
Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1) at: Tel.: (021) 483-5829 Fax: (021) 483-4372	Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 2) at: Tel.: (021) 483-5842 Fax: (021) 483-3633	Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4 th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel.: (044) 805-8600 Fax: (044) 805 8650

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ACRONYMS USED IN THIS BASIC ASSESSMENT REPORT AND APPENDICES:

ADWF	Average Dry Weather Flow
BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
CBD	Central Business District
CFR	Cape Floral Region
CoCT	City of Cape Town
DEA	National Department of Environmental Affairs
DEA&DP	Western Cape Government: Environmental Affairs and Development Planning
DPZs	Development Priority Zones
DMS	Development Management Scheme
DWS	National Department of Water and Sanitation
ECO	Environmental Control Officer
EGS	Economic Growth Strategy (2013)
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMPr	Environmental Management Programme
EN	Endangered
ESA	Ecological Support Area
FIA	Faunal Importance Assessment
GLA	Gross Leasable Area
HWC	Heritage Western Cape
I&APs	Interested and Affected Parties
IACOM	Impact Assessment Committee
IDP	Integrated Development Plan
LC	Least Concern
LLPT	Liesbeek Leisure Properties Trust
LUPA	Land Use Planning Act
LUPO	Land Use Planning Ordinance
Mamsl	Metres above mean sea level
MBPL	Municipal Planning Bylaw (2015)
NEMA	National Environmental Management Act 107 of 1998
NEM:AQA	National Environmental Management: Air Quality Act 39 of 2004
NEMBA	National Environmental Management Biodiversity Act 10 of 2004
NEM:ICMA	National Environmental Management: Integrated Coastal Management Act 24 of 2008
NEM:WA	National Environmental Management: Waste Act No. 59 of 2008
NHRA	National Heritage Resources Act 25 of 1999)
NID	Notice of Intent to Develop
NMT	Non-motorised Transport
NT	Near Threatened
NWA	National Water Act 36 of 1998
NRF	National Research Foundation
PDWF	Peak Dry Weather Flow
PES	Present Ecological State
PRASA	Passenger Rail Agency of South Africa
PSDF	Provincial Spatial Development Framework
PWWF	Peak Wet Weather Flow
PPP	Public Participation Process
S&EIR	Scoping and Environmental Impact Reporting
SAAO	South African Astronomical Observatory
SDF	Spatial Development Framework
SDP	Spatial Development Plan
SoW	Scope of Work

TBDP	Table Bay District Plan (2012)
TCT	Transport for Cape Town
TDA	Transport and Urban Development Authority
TOD	Transport Orientated Development
TMNP	Table Mountain National Park
TRUP	Two Rivers Urban Park
TRUPFC	Two Rivers Urban Park Contextual Framework and Phase 1 Environmental Management Plan
VU	Vulnerable
WLT	Western Leopard Toad
WUL	Water Use Licence
WULA	Water Use Licence Application
WWTW	Waste Water Treatment Works

DETAILS OF THE APPLICANT

Applicant / Organisation / Organ of State:	Liesbeek Leisure Properties Trust (LLPT)		
Contact person:	Jody Aufrichtig		
Postal address:	P.O. Box 786739, Sandton		
Telephone:	(021) 486 5999	Postal Code:	2164
Cellular:	083 356 8084	Fax:	021 421 0219
E-mail:	jody@ornagestreet.co.za		

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

Name of the EAP organisation:	SRK Consulting (South Africa) (Pty) Ltd		
Person who compiled this Report:	Matthew Law		
EAP Reg. No.:	CEAPSA (Certified Environmental Assessment Practitioner of South Africa)		
Contact Person (if not author):	Matthew Law		
Postal address:	P Bag X18 Rondebosch		
Telephone:	(021) 6593088	Postal Code:	7701
Cellular:	082 471 7544	Fax:	021) 685 7105
E-mail:	mlaw@srk.co.za		
EAP Qualifications:	MCom, Resource Economics, 2007 BSc (Hons), Economics, 2005 BSc, Environmental Science and Economics, 2004		

Please provide details of the lead EAP, including details on the expertise of the lead EAP responsible for the Basic Assessment process. Also attach his/her Curriculum Vitae to this BAR.

Matthew Law is a principal consultant with more than 13 years' experience in the environmental field. He has significant experience in Environmental Impact Assessment (throughout Southern Africa), the drafting of Environmental Management Plans and as an Environmental Control Officer. Matthew has detailed knowledge of and practical experience with legislation governing applications relating to environmental authorisations, mining right applications and waste management and water use licensing. Matthew is also a qualified and experienced environmental economist.

EXECUTIVE SUMMARY OF THE BASIC ASSESSMENT REPORT:

Please see Appendix K7.

SECTION A: PROJECT INFORMATION

1. ACTIVITY LOCATION

Location of all proposed sites:	Observatory Rd, Observatory Cape Town 7925
Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site (see Figure 2):	1. 151832
	2. 26426
	3. 108936
	4. 26427
	5. 15326 Rem
	6. 26169
	7. 26170
	8. 26171
	9. 26172
	10. 26173
	11. 26174
	12. 26175
Land Ownership	1. LLPT
	2. The City of Cape Town (CoCT)
	3. CoCT
	4. CoCT
	5. CoCT
	6. CoCT
	7. CoCT
	8. CoCT
	9. CoCT
	10. CoCT
	11. CoCT
	12. CoCT
Property size(s) in m ² for each proposed site:	1. 148 425 m ²
	2. 5 092 m ²
	3. 134 m ²
	4. 509 m ²
	5. 208 981 m ²
	6. 18 900 m ²
	7. 2 072 m ²
	8. 2 024 m ²
	9. 2 043 m ²
	10. 2 006 m ²
	11. 3 812 m ²
	12. 3 840 m ²
Development footprint size(s) in m ² :	210 000 m ²
Surveyor General (SG) 21 digit code for each proposed site:	1. C01600070015183200000
	2. C01600070002642600000
	3. C01600070010893600000
	4. C01600070002642700000
	5. C01600070001532600000
	6. C01600070002616900000
	7. C01600070002617000000
	8. C01600070002617100000
	9. C01600070002617200000
	10. C01600070002617300000
	11. C01600070002617400000
	12. C01600070002617500000
Zoning	1. Open Space 3
	2. Open Space 2
	3. Open Space 2
	4. Open Space 2
	5. Community 1 / Open Space 2 / Transport 2
	6. Transport 2
	7. Transport 2
	8. Transport 2
	9. Transport 2
	10. Transport 2
	11. Transport 2
	12. Transport 2

2. PROJECT DESCRIPTION

(a) Is the project a new development? If "NO", explain:

YES	NO
-----	----

The proposed development is a new development.

(b) Provide a detailed description of the scope of the proposed development (project).

The LLPT (i.e. the proponent) operates the River Club in Observatory, Cape Town (which, together with portions of adjacent properties, is collectively referred to as the site¹ - refer to Figure 1, Figure 2 and Section A1). The River Club is currently operated by the proponent as a rental enterprise, mainly for recreational (golfing) activities and conferencing.

The site is bordered to the west and north-west by the (former) and now degraded natural channel of the Liesbeek River (the original course of the Liesbeek River), and to the east by the Liesbeek River Canal and the Black River (see Figure 34). The site therefore forms a virtual "island" surrounded by these freshwater systems and is located in the floodplain of the Black and Liesbeek Rivers. The site itself is degraded and has been infilled by previous owners.

The site is in a strategically important location within the City – it is a highly accessible site in close proximity to agglomerated places of work such as the Central Business District (CBD), the Voortrekker Road activity corridor and Paarden Eiland, and is also within relatively close proximity to the metropolitan south-east. The site also falls on the north-western edge of the Two Rivers Urban Park (TRUP),

The Black River and M5 motorway have historically been barriers between communities to the east and west of the river, and the area around the river has become an unattractive edge, derelict and inaccessible to pedestrians (this includes the current access to The River Club along Observatory Road). This is largely due to the presence of two high security institutions (Valkenberg Hospital and the South African Astronomical Observatory [SAAO]), and limited public access to and through the River Club site and to the east of the Black River and the M5.

Furthermore, the site has been the subject of revitalisation initiatives for over a quarter of a century, but none have been financially viable, leading to the persistent under-utilisation of the site.

The LLPT is now proposing to redevelop the site for residential, retail, commercial, institutional and associated uses. The majority of the site is owned by the proponent.

It is the proponent's intention to develop the site as a "destination place"² within Cape Town and as the western gateway to the Two River Urban Park³ (TRUP). The proponents would like to see this gateway development accommodate a medium to high density, mixed-use agglomeration of uses which supports the vision of 'live, work, play' while retaining certain recreational and ecological aspects. In this way the proponents hope that River Club can act as a catalyst project that can be used to help to implement the greater TRUP.

At least 20% of the leasable area at the development will be allocated to residential use, and 20% of the residential area at the development will be inclusionary accommodation (see Section A (e)).

Numerous layout and activity alternatives have been considered during planning for the development (see Section E). Two layout alternatives are comparatively assessed in this Basic Assessment (BA) Report (BAR):

- The preferred development alternative (or the Riverine Corridor Alternative - see Figure 3) where the original course of the Liesbeek west of the property is infilled, development is setback from the existing Liesbeek canal, which would be rehabilitated to function as a natural watercourse;
- The second development alternative (or the Island Concept Alternative see Figure 3) where the development is setback from the original course of the Liesbeek and the canal is retained; and
- The No-Go Alternative where commercial recreation and conferencing would continue at the site, and no rehabilitation of watercourses would take place by the developer.

Both development alternatives include two precincts located on podium basement parking levels (see Figure 3 and Figure 4, and Section A2(e)) separated by a park (with ecological function) that crosses the site in an west-east direction.

As well as numerous intersection upgrades, two new river crossings will be built to access the development, one over the Black River and another over the original course of the Liesbeek River, and the developers will widen the Liesbeek Parkway between Station Road and Link Road to accommodate additional traffic anticipated from the redevelopment of the River Club.

¹ The site comprises portions of thirteen properties (see Section A1). LLPT proposes to rezone Erf 151832 (the property that LLPT owns) from Open Space Zoning 3 to Sub-Divisional Area Zoning, subdivide and develop the site in six main phases.

² A "destination place" is defined in the Cape Town Spatial Development Framework as "a place that forms a significant landmark or area of attraction and is part of the unique identity of Cape Town".

³ The site is located within the TRUP. The TRUP cultural landscape has high cultural significance due to its historical, social, aesthetic, architectural, scientific and environmental values and it possesses a strong sense of place. A separate study is currently underway to revise spatial proposals for the TRUP (Local Area SDF and Phase 1 Management Plan).

Although not specifically required to service the development, but to address infrastructure backlogs, and to implement long term City planning, the CoCT have indicated that they intend to dual Liesbeek Parkway between Link Road and Malta Road, and to upgrade the Berkley Road Extension to the site (including widening the proposed Berkley Road bridge over the Black River, and to extend Berkley Road across the site and over the original course of the Liesbeek River to link Berkley Road (and the M5) with Malta Road and Liesbeek Parkway at some point in the future. The CoCT have requested that this infrastructure be included in all applications for environmental approval for the redevelopment of the River Club.

The redevelopment of the River Club, the construction of road infrastructure required for the development of the River Club, and future road infrastructure upgrades proposed at and adjacent to the site by the CoCT are collectively referred to as the project or the development - see Section A2(e).

The development will be constructed in several phases: major roads and bridges **required for the development** will be constructed in the first phase. Precinct 1 will be developed in the south of the site, and Precinct 2 will be developed in the north. It is currently anticipated that most of the northern precinct will be developed in Phase 2, and the southern precinct and remainder of the northern precinct developed subsequently in Phase 3 to 5, but not necessarily in sequence (see Figure 5). Phase 6, which will be implemented by the CoCT will take place at some stage in the future. It is likely that Phase 1 and Phase 2 will be developed at the same time, and that subsequent phases will be developed as demand is realised into the future. Construction activities will take seven years in total.

The Scope of Work (SoW) or "battery limits" considered and assessed by the BA process includes:

- Redevelopment of the site south of the proposed Berkley Road Extension, including infilling portions of the site above the 1:100 year floodplain and an upgrade of the existing road entrance;
- The two-lane extension of Berkley Road over the Black River (required for the development, to be built by the proponent, and funded by offsets against required development contributions);
- The widening of the Berkley Road Bridge over the Black River, the widening of the Berkley Road extension, and the extension of Berkley Road from the site entrance to the west over the original course of the Liesbeek River to join Malta Road and the Liesbeek Parkway (not required for the development, to be built by the CoCT);
- A new bridge linking the site to the Liesbeek Parkway at Link Road over the original course of the Liesbeek River (required for the development, to be built by the proponent);
- The widening of the Liesbeek Parkway into the original course of the Liesbeek River, between Station Road and Link Road (required for the development, to be built by the proponent);
- The widening of the Liesbeek Parkway into the original course of the Liesbeek River, between Malta Road and Link Road (not required for the development, to be built by the CoCT); and
- The infilling of portions of the site in the floodplain, and rehabilitation of river banks and the installation of service infrastructure (by the proponent).

The proponents are making the following proposal for the following portions of the site not owned by the proponent (see Figure 2):

- Remainder of Erf 15326 (208 981 m²). This property is owned by the CoCT and includes the Berkley Road extension and the Raapenberg Wetland. The Berkley Road extension is integral to the City's transport network plan and will be developed by both the CoCT and LLPT.
- Erf 26426 Cape Town (5 092 m²). This property is owned by CoCT and accommodates the canal running along the eastern border of Portion 2 of Erf 26423 Cape Town (i.e. the NRF site). Only 1 480 m² falls on The River Club 'site', which, with the consent of the landowner, will be rehabilitated and incorporated into the buffer area abutting the eastern portion of the development and landscaped accordingly, or alternatively this land can be leased from CoCT on a long-term basis.
- Erf 26427 Cape Town (509 m²). This property is owned by CoCT and abuts Observatory Road, the old Liesbeek channel and the NRF site. With the consent of the landowner, it will be incorporated into a river buffer and landscaped accordingly. It is likely that an application to lease / purchase this land will be submitted to the CoCT's Property Management Department.
- Erf 108936 Cape Town (134 m²). This property is owned by CoCT and abuts the old Liesbeek canal and the NRF site. With the consent of the landowner, it will be incorporated into a river buffer and landscaped accordingly. It is likely that an application to lease / purchase this land will be submitted to the CoCT's Property Management Department.
- Erven. 26169, 26170, 26171, 26172, 26173, 26174 and 26175 Cape Town (34 697 m²): these properties are owned by CoCT, constitute the original course of the Liesbeek River, are considered to be the road reserve of the Liesbeek Parkway, and are zoned for Transport. The Liesbeek Parkway will be widened into these properties, and the original course of the river will be infilled or rehabilitated (depending on the alternative selected) and landscaped accordingly. It is likely that an application to lease / purchase this land will be submitted to the CoCT's Property Management Department.

Please note: This description must relate to the listed and specified activities in paragraph (d) below.

(c) Please indicate the following periods that are recommended for inclusion in the environmental authorisation:

(i)	the period within which commencement must occur,	5 years
(ii)	the period for which the environmental authorisation should be granted and the date by which the activity must have been concluded, where the environmental authorisation does not include operational aspects;	15 years
(iii)	the period that should be granted for the non-operational aspects of the environmental authorisation; and	15 years
(iv)	the period that should be granted for the operational aspects of the environmental authorisation.	N/A

Please note: The Department must specify the abovementioned periods, where applicable, in an environmental authorisation. In terms of the period within which commencement must occur, the period must not exceed 10 years and must not be extended beyond such 10 year period, unless the process to amend the environmental authorisation contemplated in regulation 32 is followed.

(d) List all the listed activities triggered and being applied for.

Please note: The onus is on the applicant to ensure that all the applicable listed activities are applied for and assessed as part of the EIA process. Please refer to paragraph (b) above.

EIA Regulations Listing Notices 1 and 3 of 2014 (as amended):

Listed Activity No(s):	Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 1 (GN No. R. 983)	Describe the portion of the development that relates to the applicable listed activity as per the project description.	Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational.
19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.	The construction of the following infrastructure: <ul style="list-style-type: none"> • Environmental setbacks at the interfaces with rivers and the site; • Infilling of the original course of the Liesbeek River; • Two culverted crossings or bridges (depending on the alternative selected), over the original course of the Liesbeek River (to extend Link Road into the site, and the extend Berkley Road to Malta Road); • A two-lane bridge over the Black River; • The widening of the Liesbeek Parkway into the original course of the Liesbeek River; • Construction of footbridges, boardwalks and other recreational / non-motorised transport infrastructure in ecological setbacks; • The widening of the new bridge over the Black River; • The (possible) infilling of the original course of the Liesbeek River adjacent to the site (depending on the alternative selected); and • The (possible) rehabilitation of the Liesbeek Canal east of the site. 	Development
	Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 3 (GN No. R. 985)	Describe the portion of the development that relates to the applicable listed activity as per the project description.	Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational.
15	The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or	The transformation of a portion of 15326-RE (only) for the extension of Berkley Road. Although this property is zoned as Community 1, Transport 2 and Open Space 2, a portion of the project footprint (the Berkley Road Extension) is located in an area categorised as "Buffer 1" and "Core 2" in the Table Bay District Plan (TBDP) and	Development

	after 02 August 2010 in areas zoned for conservation use in urban areas in the Western Cape.	as "Biodiversity Protection Spatial Planning Category" in the CoCT Spatial Development Framework (SDF) although no natural vegetation exists in this area (refer to Figure 38 and Figure 39). This activity has therefore been conservatively included in the application.	
18	The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre in urban areas zoned for conservation use in the Western Cape.	The extension of Berkley Road on of a portion of 15326-RE which is zoned as Community 1, Transport 2 and Open Space 2. A portion of the project footprint is located in an area categorised as "Buffer 1" and "Core 2" in the TBP and as "Biodiversity Protection Spatial Planning Category" in the CoCT SDF although no natural vegetation exists in this area (refer to Figure 38 and Figure 39). This activity has therefore been conservatively included in the application.	Development

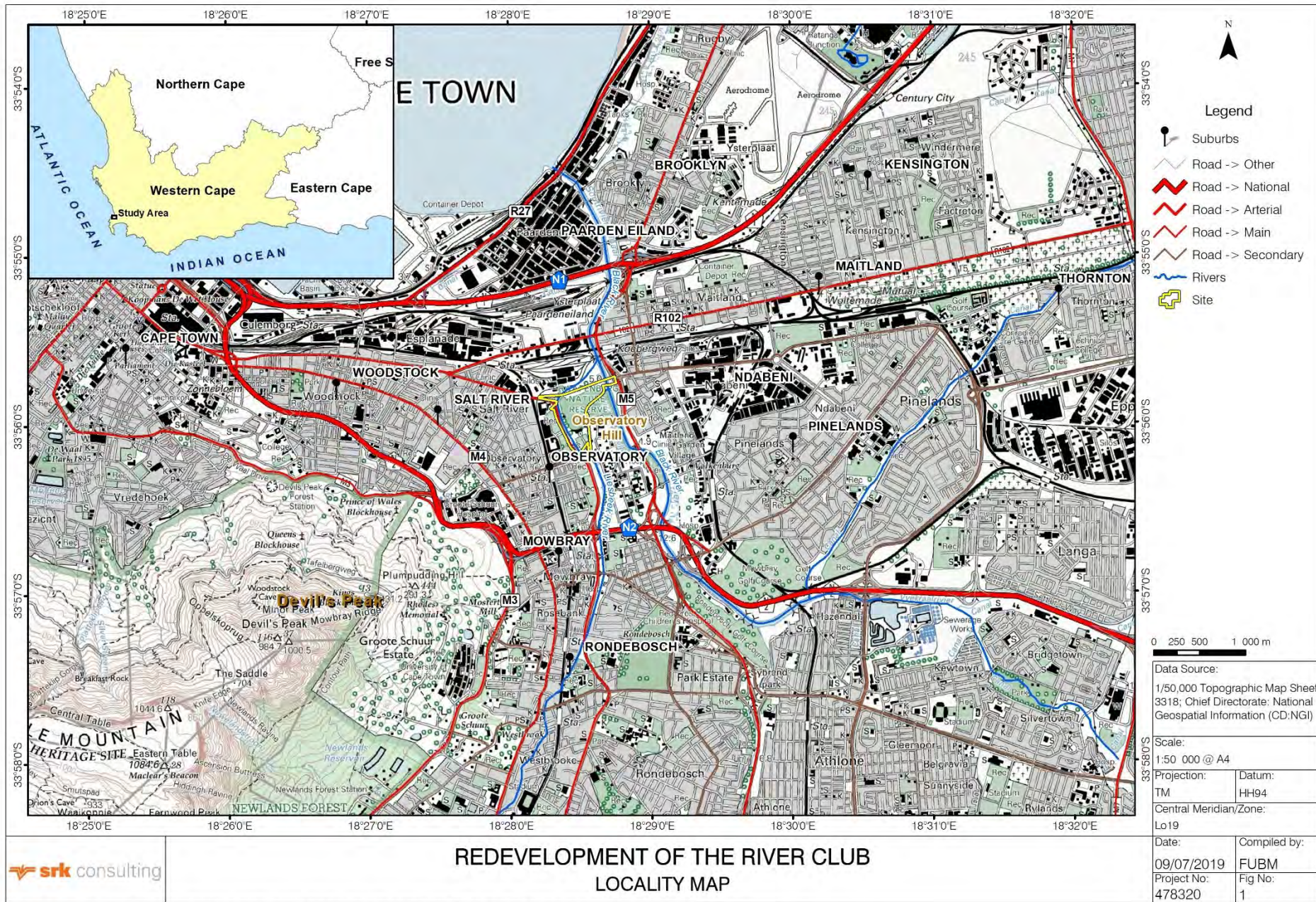
Waste management activities in terms of the NEM: WA (GN No. 921):

Category A Listed Activity No(s):	Describe the relevant <u>Category A</u> waste management activity in writing as per GN No. 921	Describe the portion of the development that relates to the applicable listed activity as per the project description

Note: If any waste management activities are applicable, the **Listed Waste Management Activities Additional Information Annexure** must be completed and attached to this Basic Assessment Report as **Appendix I**.

Atmospheric emission activities in terms of the NEM: AQA (GN No. 893):

Listed Activity No(s):	Describe the relevant atmospheric emission activity in writing as per GN No. 893	Describe the portion of the development that relates to the applicable listed activity as per the project description.



Path: G:\New Proj\478320_RiverClub EIA\GIS\GISPROJ\MXD\2019\July\2019\478320_Fig1_RiverClub EIA_LocalityMap_A4L_20190709.mxd

Figure 1: Locality Map

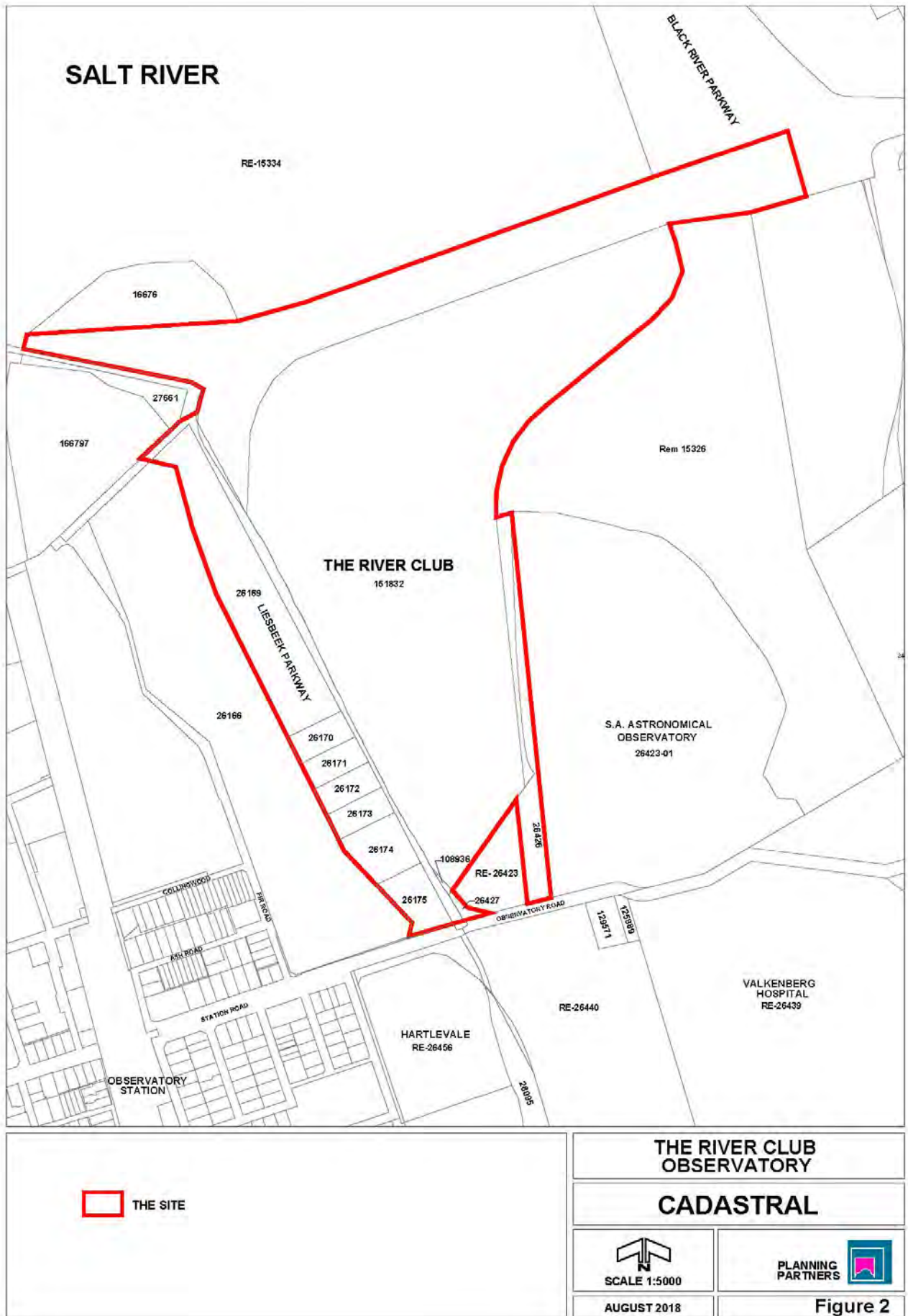


Figure 2: Cadastral Map

- (e) Provide details of all components (including associated structures and infrastructure) of the proposed development and attach diagrams (e.g., architectural drawings or perspectives, engineering drawings, process flowcharts, etc.).

Buildings Provide brief description below:	YES	NO																																																																																																																																															
<p>Portions of the site fall below the 1 in 100 year floodline elevation, which has been assessed to be 4.81 metres above mean sea level (mamsl) at the site. The ground levels of buildings proposed at the site will therefore be raised above this level (but basements will be below this level).</p> <p>The following 22 buildings are currently anticipated for the Riverine Corridor Alternative (refer to Figure 3):</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 15%;">Precinct:</th> <th style="width: 15%;">Building:</th> <th style="width: 20%;">Anticipated Floor Area</th> <th style="width: 15%;">Maximum Floors</th> <th style="width: 35%;">Anticipated Height (masl)</th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td><td></td><td>4</td><td>26.2</td></tr> <tr><td>1</td><td>2</td><td></td><td>4</td><td>26.2</td></tr> <tr><td>1</td><td>3</td><td></td><td>4</td><td>26.2</td></tr> <tr><td>1</td><td>4</td><td></td><td>4</td><td>42.7</td></tr> <tr><td>1</td><td>5</td><td></td><td>4</td><td>26.2</td></tr> <tr><td>1</td><td>6</td><td></td><td>4</td><td>26.2</td></tr> <tr><td>1</td><td>7</td><td></td><td>7</td><td>45.4</td></tr> <tr><td>1</td><td>8</td><td></td><td>6</td><td>35</td></tr> <tr><td>1</td><td>9</td><td></td><td>9</td><td>54.2</td></tr> <tr><td>1</td><td>10</td><td></td><td>9</td><td>54.2</td></tr> <tr><td>1</td><td>11</td><td></td><td></td><td></td></tr> <tr><td colspan="2">Subtotal Precinct 1:</td><td>65 000 m²</td><td>N/A</td><td>N/A</td></tr> <tr><td>2</td><td>13</td><td></td><td>8</td><td>38.4</td></tr> <tr><td>2</td><td>14</td><td></td><td>8</td><td>38.4</td></tr> <tr><td>2</td><td>15</td><td></td><td>8</td><td>38.4</td></tr> <tr><td>2</td><td>16</td><td></td><td>6</td><td>29.4</td></tr> <tr><td>2</td><td>17</td><td></td><td>9</td><td>43</td></tr> <tr><td>2</td><td>18</td><td></td><td>10</td><td>47.4</td></tr> <tr><td>2</td><td>19</td><td></td><td>10</td><td>47.4</td></tr> <tr><td>2</td><td>20</td><td></td><td>10</td><td>47.4</td></tr> <tr><td>2</td><td>21</td><td></td><td>10</td><td>47.4</td></tr> <tr><td>2</td><td>22</td><td></td><td>10</td><td>47.4</td></tr> <tr><td colspan="2">Subtotal Precinct 2:</td><td>85 000 m²</td><td>N/A</td><td>N/A</td></tr> <tr><td colspan="2">Total Precinct 1 and 2:</td><td>150 000 m²</td><td>N/A</td><td>N/A</td></tr> </tbody> </table> <p>In addition to the buildings listed above, a cultural, educational, environmental and heritage centre is planned.</p> <p>Basement parking at Precinct 1 and Precinct 2 will be built on the current ground level of the site to create a podium at each precinct at -5.4 mamsl – between -3.5 and -1.5 m above current ground level.</p> <p>The total extent of the podium (or basement) will be 79 500 m² (~ 8 ha). The remainder of the River Club property will be retained as open space (69 000 m²) and will include both soft landscaping (i.e. the park or ecological corridor, and setbacks at the interfaces of rivers – 61 500 m²) and hard open spaces (i.e. including covered pedestrian space, foot and cycle paths, and service infrastructure – 7 500 m²).</p> <p>Within the two podium areas, buildings will occupy a footprint of ~ 45 000 m², and the remaining area will include hard landscaped open spaces (~34 500 m²). Roads will occupy ~32 000 m², and an additional 51 500 m² of landscaped open areas will be created by infilling the original course of the Liesbeek and rehabilitating the canal.</p> <p>In total, both hard and soft landscaped open spaces at the site will extend approximately 133 000 m² (~13.3 ha).</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 70%;">Development Component:</th> <th style="width: 15%;">Footprint:</th> <th style="width: 15%;">% of development:</th> </tr> </thead> <tbody> <tr> <td>Retail, commercial, residential, institutional and associated development</td> <td style="text-align: center;">~4.5 ha</td> <td style="text-align: center;">22%</td> </tr> <tr> <td>Hard landscaping (including covered pedestrian space, foot and cycle paths, and service infrastructure)</td> <td style="text-align: center;">~4 ha</td> <td style="text-align: center;">19%</td> </tr> <tr> <td>Roads, bridges and surface parking</td> <td style="text-align: center;">~3.2 ha</td> <td style="text-align: center;">16%</td> </tr> <tr> <td>Soft landscaping / Open space / Rehabilitated watercourses</td> <td style="text-align: center;">~9.3 ha</td> <td style="text-align: center;">45%</td> </tr> <tr> <td style="text-align: center;">Total:</td> <td style="text-align: center;">21 ha</td> <td style="text-align: center;">100%</td> </tr> </tbody> </table> <p>Types of land use envisaged for the development are as follows:</p> <ul style="list-style-type: none"> • Commercial: offices that will be provided to cater for, e.g. financial services, general business and sales and marketing. <p style="padding-left: 40px;">A 200 key hotel is currently planned. It is anticipated that the hotel may serve both business and leisure travellers.</p>			Precinct:	Building:	Anticipated Floor Area	Maximum Floors	Anticipated Height (masl)	1	1		4	26.2	1	2		4	26.2	1	3		4	26.2	1	4		4	42.7	1	5		4	26.2	1	6		4	26.2	1	7		7	45.4	1	8		6	35	1	9		9	54.2	1	10		9	54.2	1	11				Subtotal Precinct 1:		65 000 m²	N/A	N/A	2	13		8	38.4	2	14		8	38.4	2	15		8	38.4	2	16		6	29.4	2	17		9	43	2	18		10	47.4	2	19		10	47.4	2	20		10	47.4	2	21		10	47.4	2	22		10	47.4	Subtotal Precinct 2:		85 000 m²	N/A	N/A	Total Precinct 1 and 2:		150 000 m²	N/A	N/A	Development Component:	Footprint:	% of development:	Retail, commercial, residential, institutional and associated development	~4.5 ha	22%	Hard landscaping (including covered pedestrian space, foot and cycle paths, and service infrastructure)	~4 ha	19%	Roads, bridges and surface parking	~3.2 ha	16%	Soft landscaping / Open space / Rehabilitated watercourses	~9.3 ha	45%	Total:	21 ha	100%
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- **Retail:** mix will be focused around a lifestyle/ health and sports theme anchored by convenience food retailers. The balance of the retail offering will consist of typical line shops as well restaurants, food and beverage outlets and a gym in keeping with the tenant mix focus.

Retail facilities will be configured as a “high street”, with the appearance of a group of buildings lining a (pedestrian) high street. The high street will have open and covered areas.

- **Residential:** residential units will consist of studio / one-bedroom and two-bedroom units with an average floor area (gross leasable area [GLA]) of between 25 m² and 77 m². Residential GLA will comprise at least 20% of the development. At this stage, the LLPT envisages a rental-only model for residential units.

Although the majority of residential units will be priced according to market dynamics, the proponent has committed to include a component of “inclusionary housing” in the development scheme. 20% of residential GLA will be for inclusionary housing.

Inclusionary housing units will be integrated into apartment blocks as far as possible. The LLPT will be offering these units at below their market rental value.

Tenants in inclusionary houses will be selected by the LLPT on an application basis – at this stage the LLPT envisages that beneficiaries will be households of employed civil servants (teachers, nurses, policemen etc.) earning between R6 000 – R18 000/month.

The LLPT envisage that a Mixed Use Association Agreement will govern and control the rights of use, similar to Sectional Title Rules for residential sections (when combined in a Mixed Use development), but with very specific rules to govern the use of the Inclusionary units so as to avoid abuse of the subsidy programme. The rules will comply with all current legislation, including the new Ombud Act of Collective Schemes.

- **Associated Uses:** Uses associated with the above are also possible such as community facilities and schools.

A breakdown of the land uses proposed for the development is presented in the table below.

Land Use	Anticipated Floor Area (m ²)
Retail (including restaurants, etc.)	16 000
Residential (including subsidised component)	30 000
Office	80 000
Ancillary (including gym, hotel conference facilities, etc.)	24 000
Total:	150 000

Precinct 1 will include ~65 000 m² of floor area, and Precinct 2 will include ~85 000 m² of floor area.

Although the floor area of the development will not exceed 150 000 m², and the proponents are committed to allocating at least 20% of the development to residential use (of which 20% will be offered at below the market rate for rental properties), the proponents require a level of flexibility to respond to market conditions. The precise land use mix (residential, commercial and retail) and height and bulk of each building can therefore not be precisely confirmed at this stage. The above table represents the maximum height for each building and anticipated floor space for the Riverine Corridor Alternative. The bulk envelopes (maximum heights and footprints of each building) are illustrated for both development alternatives in Figure 3 and Figure 4.



1 This denotes the number of storeys above the base level.

16m This denotes the estimated building height from the proposed first level of habitable space at 6.4m above MSL to the top of the uppermost level of habitable space. Note the height listed excludes roof profiles and roof level service rooms.

PRECINCT 1:
The base level (i.e. average ground level) of the building proposed in Precinct 1 is 3.10m above msl.

PRECINCT 2:
The base level (i.e. average ground level) of the building proposed in Precinct 2 is 4.19m above msl.

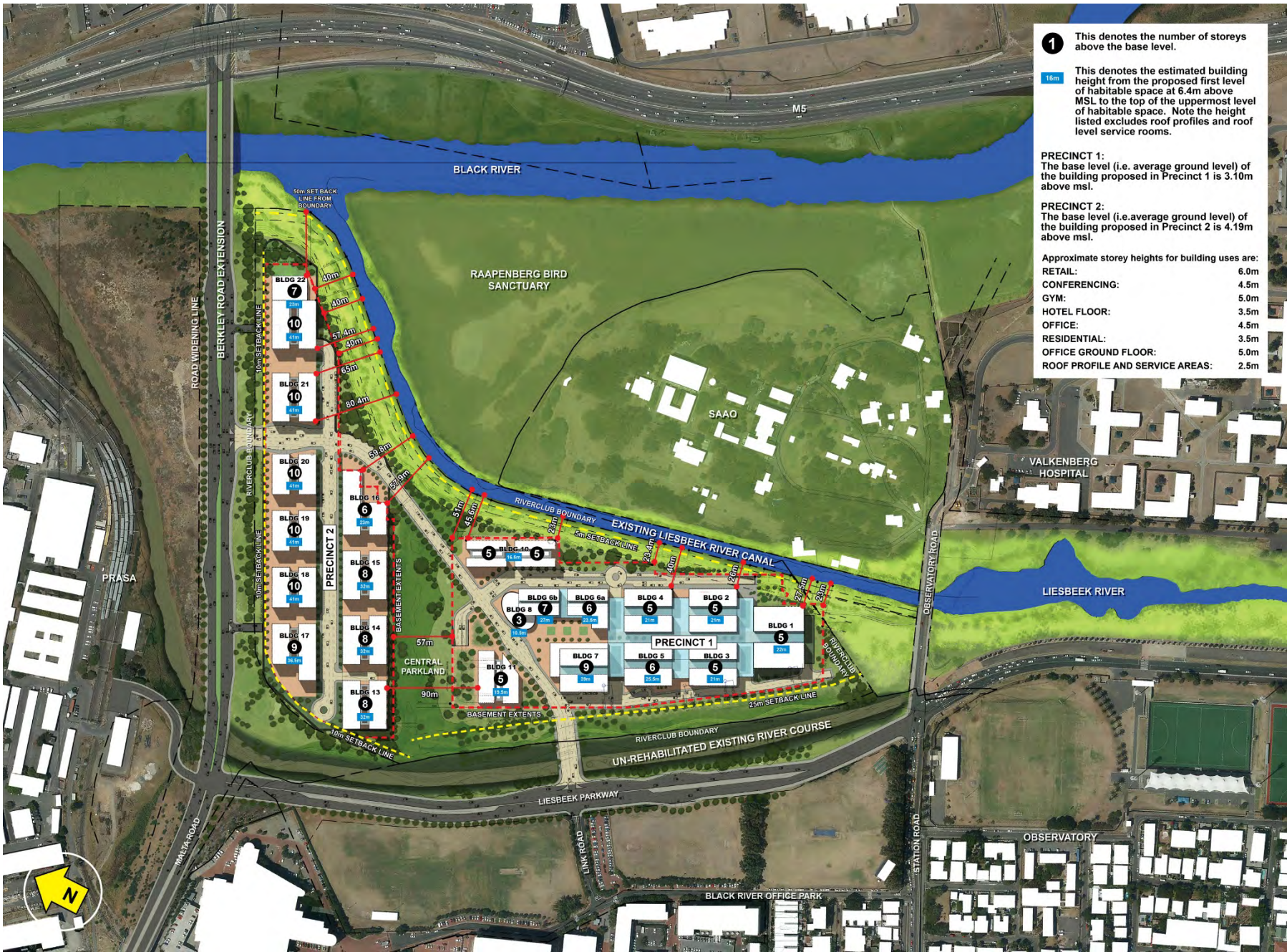
Approximate storey heights for building uses are:

RETAIL:	6.0m
CONFERRING:	4.5m
GYM:	5.0m
HOTEL FLOOR:	3.5m
OFFICE:	4.5m
RESIDENTIAL:	3.5m
OFFICE GROUND FLOOR:	5.0m
ROOF PROFILE AND SERVICE AREAS:	2.5m





Figure 3: Preferred Development Layout



- 1** This denotes the number of storeys above the base level.
- 16m** This denotes the estimated building height from the proposed first level of habitable space at 6.4m above MSL to the top of the uppermost level of habitable space. Note the height listed excludes roof profiles and roof level service rooms.

PRECINCT 1:
The base level (i.e. average ground level) of the building proposed in Precinct 1 is 3.10m above msl.

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The base level (i.e. average ground level) of the building proposed in Precinct 2 is 4.19m above msl.

Approximate storey heights for building uses are:

RETAIL:	6.0m
CONFERRING:	4.5m
GYM:	5.0m
HOTEL FLOOR:	3.5m
OFFICE:	4.5m
RESIDENTIAL:	3.5m
OFFICE GROUND FLOOR:	5.0m
ROOF PROFILE AND SERVICE AREAS:	2.5m





Figure 4: Layout Alternative 1



Figure 5: Development Phases

Infrastructure (e.g., roads, power and water supply/ storage) Provide brief description below:	YES	NO
<p>Roads and Bridges</p> <p>Access to the site is currently from Observatory Road in the south of the site (see Figure 1). This access will be used to allow emergency access in the short term. In future, this access will provide a physical connection to future TRUP developments, and possibly as a service entrance to the River Club.</p> <p>During the initial phase of development (Phase 1), a ~530 m long two-lane internal link road between Liesbeek and Parkway and Berkley Road extension, including a two-lane crossing (preferred alternative) or bridge (alternative 1) over the original course of the Liesbeek River into the development (see Figure 8) and a ~450m two-lane extension of Berkley Road (from east of the site, including a two lane, ~80m long bridge over the Black River – see Figure 10) are proposed to provide access to the development. The new internal Link Road and the Berkley Road extension will provide access to the site during all phases of development and into the future. Liesbeek Parkway will initially also be widened between Station Road and Link Road to four lanes to accommodate development traffic.</p> <p>The full Berkley Road Extension is an approved scheme within a right of way proclaimed and set aside for this purpose⁴. The land vests in the CoCT, who, along with the TRUP initiative, view the extension as an important infrastructure project. The proponent will extend Berkley Road as proposed above and widen Liesbeek Parkway between Station Road and Link Road, funded by offsets against the required development contribution payable to the CoCT. The CoCT will be responsible (at some stage in the future or concurrently with the initial phases for practical reasons and/or if funding is available) for the widening of the Berkley Road extension to a six lane road (including the bridge over the Black River) and the construction of the remainder of the Berkley Road extension, including the construction of a crossing over the original course of the Liesbeek River to connect this road and the remainder of the internal link road with Malta Road / Liesbeek Parkway. The proponent will be responsible for widening the Link Road crossing over the original course of the Liesbeek River and the remainder of the internal link road when development traffic volumes require this upgrade. The CoCT will, at some stage in the future when required, widen the Liesbeek Parkway between Link Road and Malta Road, and between Station Road and the N2.</p> <p>The full extension of Berkley Road, including the crossings of both the Black River (see Figure 10) and Liesbeek River (see Figure 14), the widening of the Black River Bridge, the full four lane Link Road Crossing of the original course of the Liesbeek River (see Figure 8) and the widening of the Liesbeek Parkway from Station Road to Malta Road (see Figure 15) are all subject of the applications for the development of the River Club.</p> <p>Should the preferred development alternative (the Riverine Corridor Alternative) be selected, the crossings over the (infilled) original course of the Liesbeek River will include box culverts for faunal movement (see Figure 8 and Figure 14). Ramps to the bridge over the Black River will each also include two box culverts for faunal movement (see Figure 10). Should Alternative 1 (the Island Concept Alternative) be selected, crossings over the Liesbeek River will be bridge structures, and ramps to bridges over the Liesbeek and Black Rivers will all include culverts for faunal movements (see Figure 8, and Figure 10).</p> <p>Allowance will be made for pedestrian walkways on all river crossings.</p> <p>Site egress during high order flood events will be via the proposed Berkley Road Bridge to the east.</p> <p>The following additional upgrades to the public road network are proposed by the developer to accommodate additional traffic from Precinct 1 (and other developments in the area):</p> <ul style="list-style-type: none"> • Upgrade of the signalised intersection of Link Road and Liesbeek Parkway (see Appendix G1); • Upgrade of the un-signalised intersection of the M5 and Berkley Road to a signalised intersection (see Appendix G1); • The provision of new access from Berkley Road to the development; • The provision of a new intersections on the internal Link Road to provide access to Precincts 1 and 2 of the development; • The widening of a portion of Liesbeek Parkway between Link road and Station Road intersections; and • Signal optimisation at the intersection of Station Road and Liesbeek Parkway. <p>The traffic impact assessment has found that the Liesbeek Parkway south of the development has a poor level of service at current traffic volumes, and therefore, that this portion of the road must be widened by the CoCT regardless of whether the development of the River Club proceeds or not. Furthermore, the traffic impact assessment found that the development will not significantly alter the (already poor) level of service of this road. The CoCT must therefore widen Liesbeek Parkway between the N2 and Station Road and upgrade the intersection between the N2 and Liesbeek Parkway in order to improve the current service levels on this part of public road network, but not as a result of, or precondition for the development of the River Club.</p> <p>During the development of Precinct 2, two additional left-in left-out accesses will be provided on the Berkley Road Extension by the River Club developer, and this road will be extended by a further 180 m.</p>		

⁴ Berkley Road extension was originally indicated as a Proclaimed Main Road (MR149), in terms of the Roads Ordinance 1949 (Ordinance 12 of 1949), in Provincial Gazette 385 of 1968 (i.e. item 27 in an extract of the Provincial Gazette). The Berkley Road extension has since appeared on the CoCT's Road Network Plan on numerous occasions, including that

In order to accommodate additional traffic on the public road network from Precinct 2, the developer must (see Appendix G1) upgrade the intersection at the main entrance to the development on Berkley Road to accommodate the traffic using the second access.

The proposed internal road network is illustrated in Figure 3 and Figure 4. All internal roads will have a single lane in each direction (other than at intersections), but the road linking the Berkley Road Extension and Link Road through the development will be planned so that it can be converted to a four lane road (i.e. two lanes in each direction). This road includes box culverts at the ecological corridor to allow faunal movement (see Figure 8).

Prior to the full extension of Berkley Road, measures to discourage private vehicle movements through the site (i.e. linking Liesbeek Parkway to Berkley Road) are essential to ensure that this road through the development functions at acceptable levels of service during peak periods (i.e. does not operate beyond full capacity).

Parking

The site is located in a Standard Area in terms of the CoCT Parking Scheme. Based on the current land use mix anticipated, this would require that 5849 bays are provided at the development.

The CoCT is promoting a development strategy referred to as Transit Orientated Development (TOD), where a greater reliance on public transport is promoted, and the use of private vehicles is discouraged. Strategies to promote TOD include the reduced provision of parking at new developments, or the provision of parking areas that can be repurposed as public transport becomes more viable. The TRUP development also envisage a future with a far lower reliance on private vehicles (and therefore on-site parking bays).

At this stage it is not practical to not cater for on-site parking. However, the LLPT have agreed to reduce their parking requirements at the site to 4 801 bays (refer to Appendix G1), to allow for the repurposing of above ground parking areas into other uses in the design of buildings and to promote shared parking in TRUP (at the River Club) as this broader development proposal is realised.

Precinct 1 and 2 will both include one basement parking level, and one above ground parking levels. 60 surface parking bays will be provided in each precinct (i.e. a total of 120 surface parking bays).

Basement parking structures will be designed to prevent water ingress. A tanked basement structure will be selected, and ingress will be limited to minor seepage. Minimal amounts of seepage shall be pumped into detention ponds and then discharged into adjacent watercourses.

Public Transport

Public transport to the site will be predominantly rail and road based. The Observatory Station is within walking distance, while Liesbeek Parkway and Station Road are on bus routes (Golden Arrow – although no bus stops are provided) and Liesbeek Parkway, Station Road, Main Road and Voortrekker Road are all served by minibus taxis (see Figure 6).

TRUP has also proposed a public and non-motorised transport (NMT) transport corridor to the south of the site on Station Road which may also serve the development in the future.

It is anticipated that approximately 39% of the population at the development will make use of public transport services in the future, and despite the extent of the public transport network at the site, the capacity of the public transport services will need to be expanded, or additional public transport facilities will need to be provided by the CoCT in the future.

In the future, a MyCiti Bus route will run along Main Road to the west of the development, and may turn into the development.

In order to access the surrounding public transport network the developers will:

- Provide a high quality NMT network (see below);
- Facilitate the movement of public transport routes through the development (see Figure 11);
- Provide taxi drop-off points; and
- Provide Uber bays.

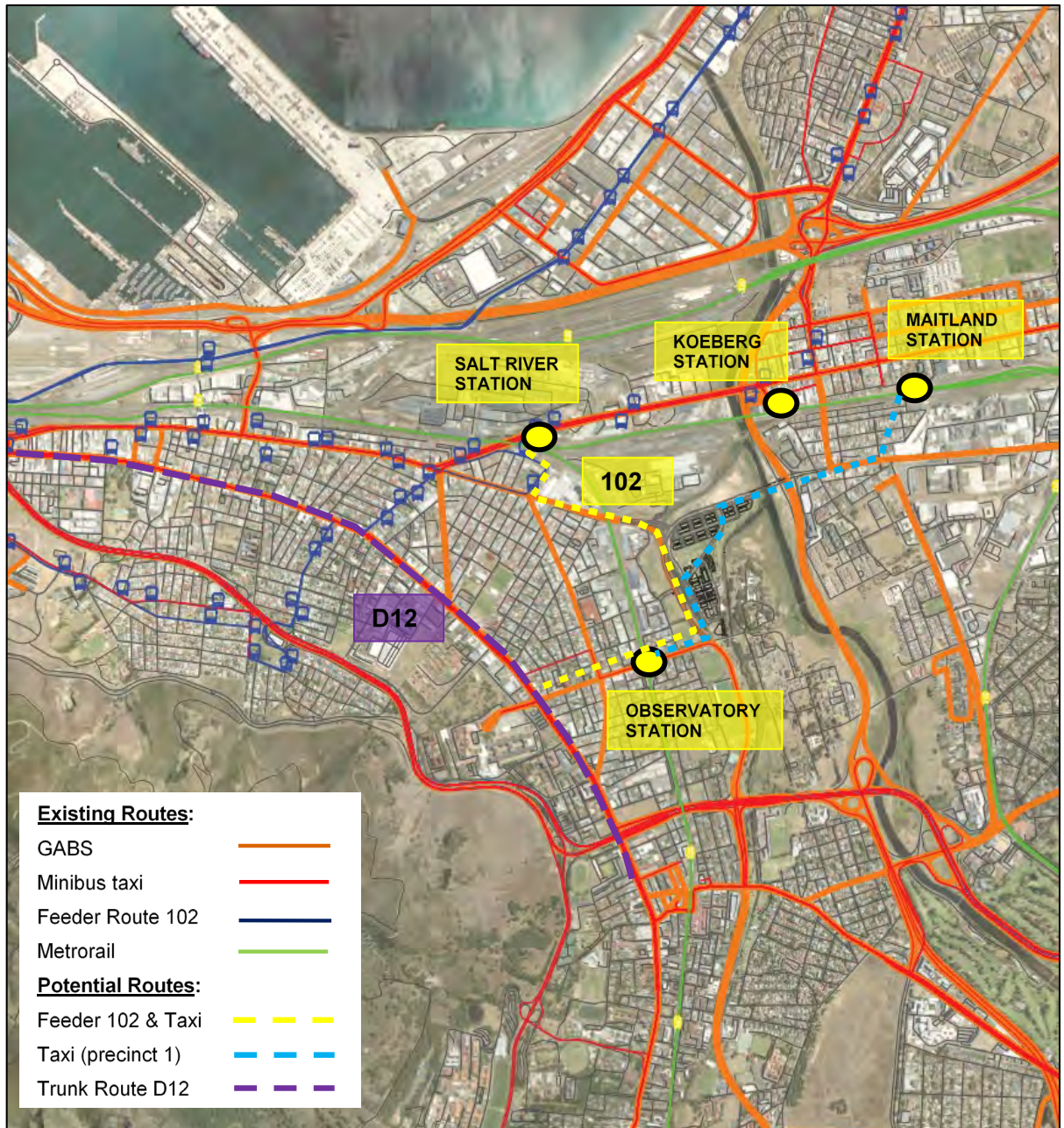


Figure 6: Public transport routes

Non-Motorised Transport Systems

A NMT corridor is already established: a riverside walkway and bikeway runs from Mowbray to the River Club and another walk and bikeway runs on Malta Road through Salt River and Woodstock. These routes are linked by a bikeway on the western side, and a sidewalk on the eastern side of Liesbeek Parkway from the intersection with Station Road northbound towards Malta Road. Crossing facilities exist at the major intersection of Liesbeek Parkway with Station Road and also at the Liesbeek Parkway / Link Road intersection. Furthermore, Observatory Road has narrow sidewalks on both sides. Station Road also has sidewalks on both sides for pedestrians.

To accommodate the number of pedestrians anticipated to be generated by the development, new NMT facilities will be required. In this regard, the following is proposed by the developer (see Figure 7):

- Walking and cycling paths in ecological setbacks on both the eastern and western boundaries of the development;
- All roads (and bridges) will have sidewalks that are at least 2 m wide with adequate lighting for safe night-time use; and
- Wayfinding signs to provide information/guide NMT users.

The River Club will provide an attractive, continuous amenity for cyclists and pedestrians, and link areas to the east of the Black River to the west by providing a bridge over the Black River.

Pedestrian sidewalks beyond the site boundary will be retained in road upgrades required for the development, and no adverse impact on pedestrian access to TRUP is anticipated from the development.

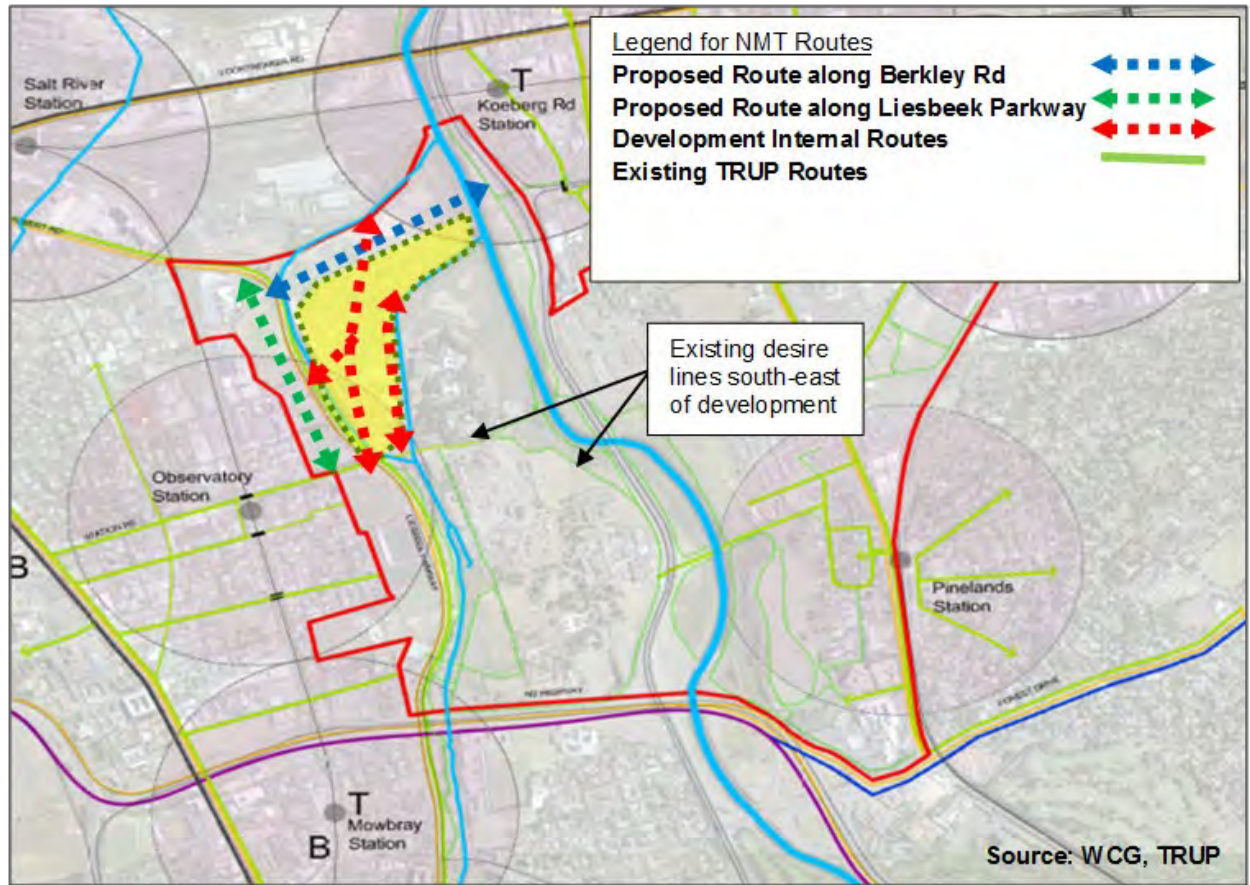


Figure 7: NMT transport routes

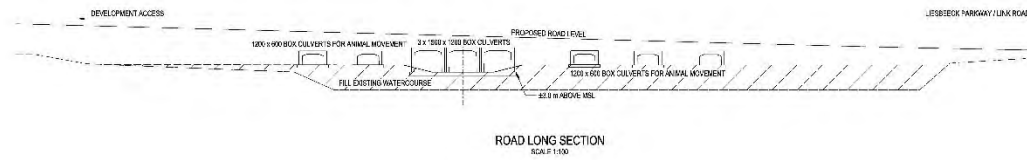
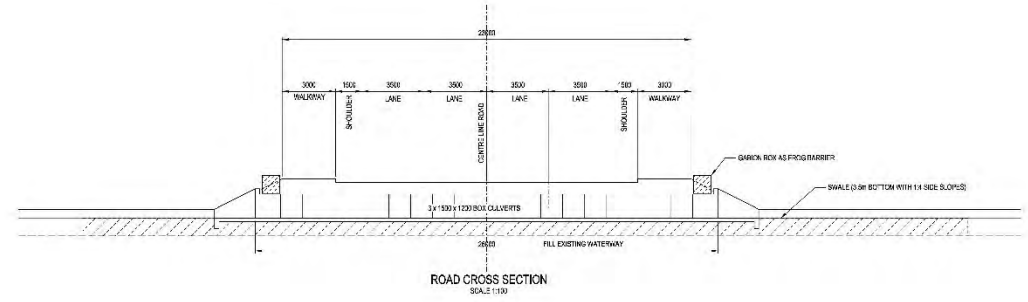


Figure 8: Link Road Crossing – Preferred Alternative

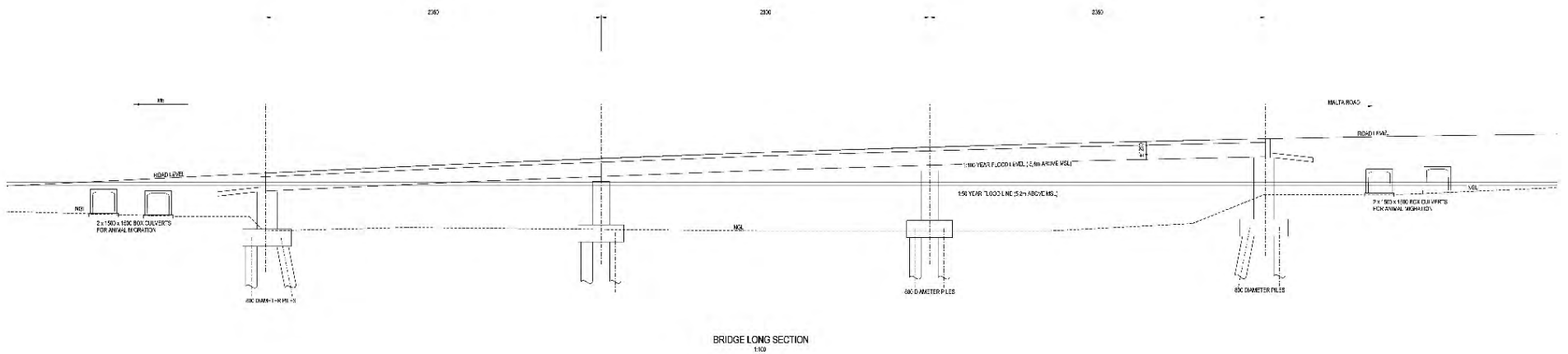
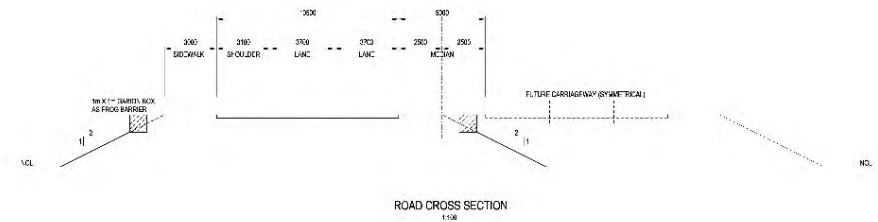
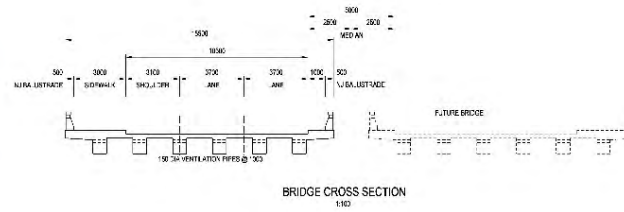


Figure 10: Berkley Road Bridge

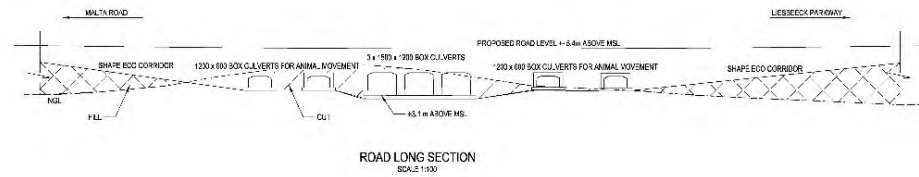
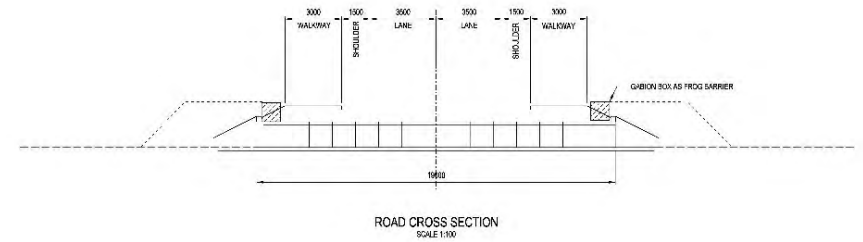


Figure 11: Road through ecological corridor

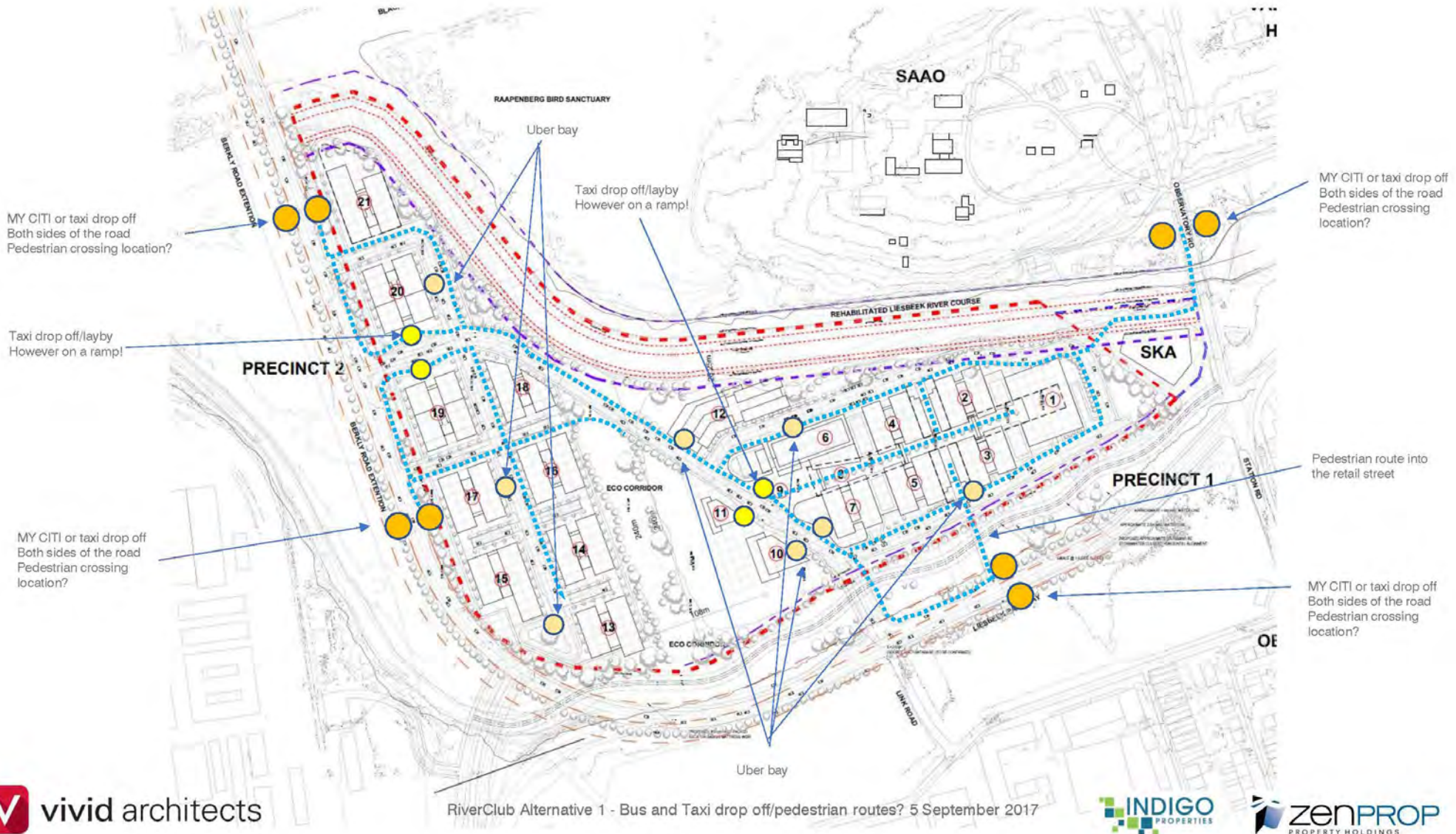


Figure 12: Public transport routes and services at the development

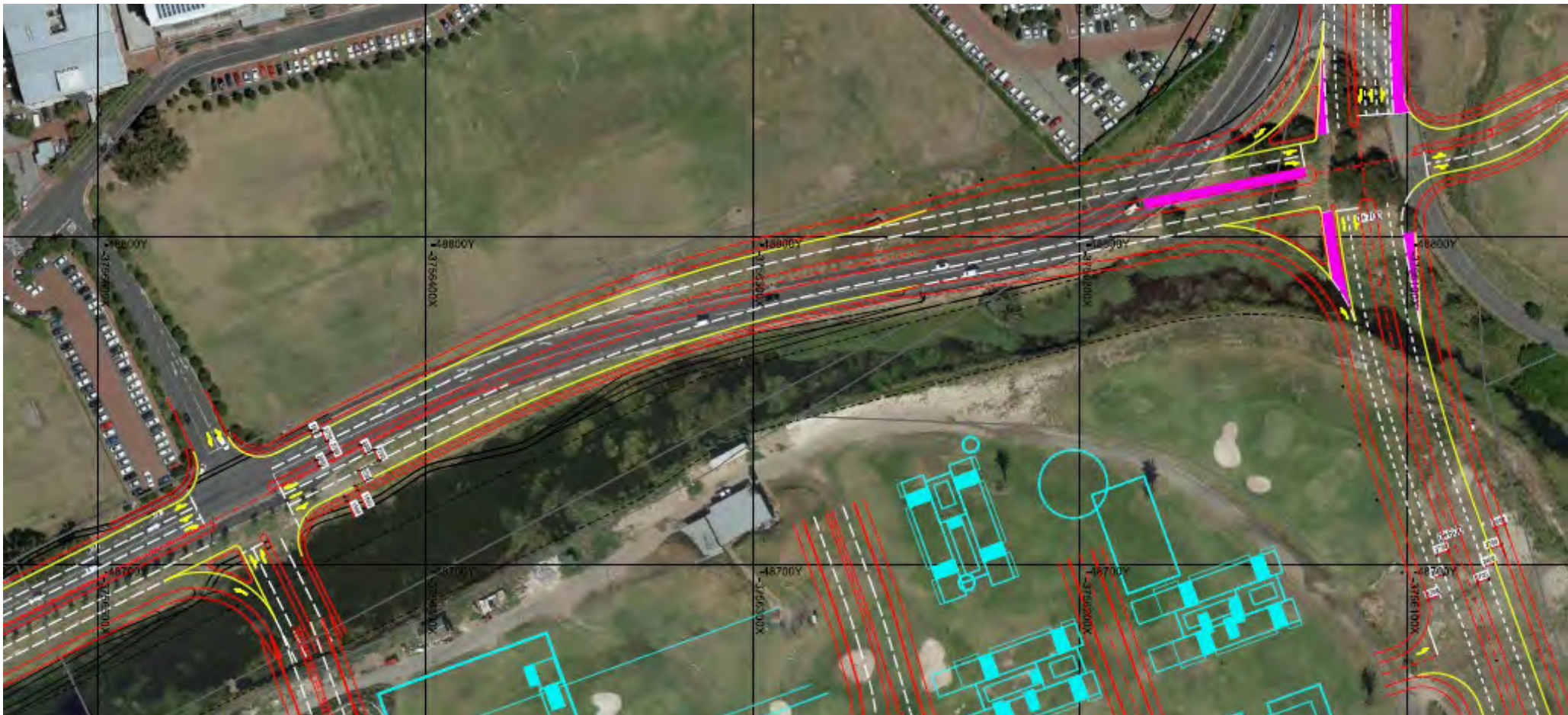
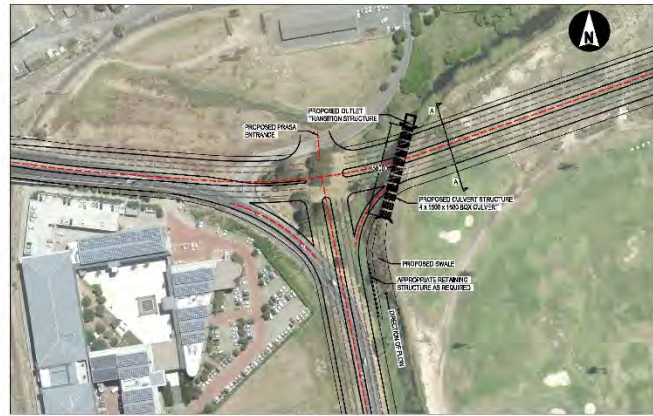


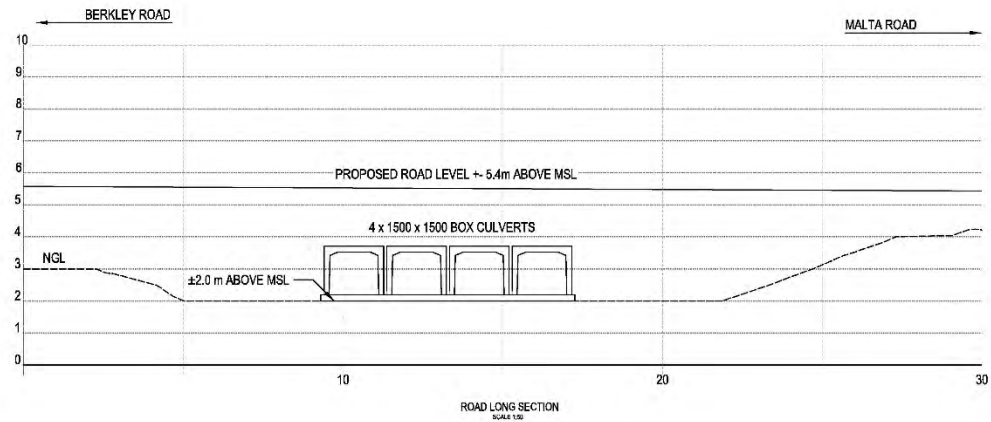
Figure 13: Widening of the Liesbeek Parkway



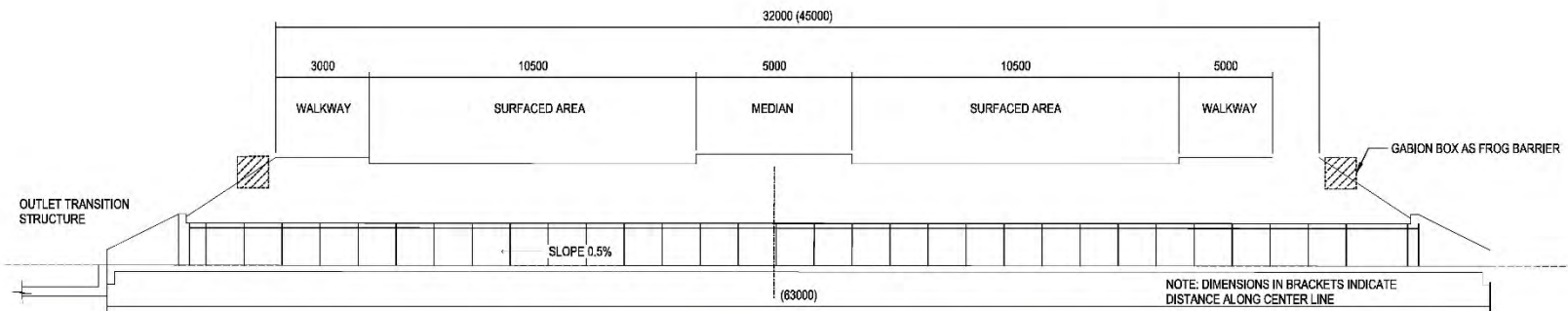
LAYOUT PLAN
SCALE 1:1000



KEYPLAN
N.T.S.



ROAD LONG SECTION
SCALE 1:50



ROAD CROSS SECTION A-A
SCALE 1:50

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zenPROP
PROPERTY HOLDINGS

CLIENT	APPROVED	SCALE	DOC	PROJECT	PROJECT
ZENPROP	AS SHOWN	AS SHOWN	AS SHOWN	MALTA AND BERKLEY CROSSING	RIVER CLUB RESERVE DEPT
DATE	DATE	DATE	DATE	TITLE	MALTA AND BERKLEY CROSSING
11/03/2024	11/03/2024	11/03/2024	11/03/2024	DRAWING NO.	112405
DESIGNED	CHECKED	DATE	DATE	SCALE	1:500
J. JOONKAR	J. JOONKAR	11/03/2024	11/03/2024	DATE	11/03/2024
DATE	DATE	DATE	DATE	DATE	DATE
11/03/2024	11/03/2024	11/03/2024	11/03/2024	11/03/2024	11/03/2024

Figure 14: Berkley Road Crossing over the original course of the Liesbeek River (Preferred Development Alternative)



THE CLIENT IS TO BE ADVISED THAT THE DRAWING IS FOR DISCUSSION ONLY AND DOES NOT REPRESENT A FINAL DESIGN. THE CLIENT IS TO BE ADVISED THAT THE DRAWING IS FOR DISCUSSION ONLY AND DOES NOT REPRESENT A FINAL DESIGN. THE CLIENT IS TO BE ADVISED THAT THE DRAWING IS FOR DISCUSSION ONLY AND DOES NOT REPRESENT A FINAL DESIGN.

No.	DATE	REVISION	CONSULT	ENG.

DATE TOWN
 Aurecon Centre
 1 Century City Drive
 Westfield Precinct
 Century City
 Tel: +27 21 528 8400
 Fax: +27 21 528 9500



DESIGNER	DESIGNER APPROVAL
NAME: _____ Prof. Reg. No.: _____ DATE: _____	NAME: _____ Prof. Reg. No.: _____ DATE: _____
DESIGNED BY: _____ NAME: _____ Prof. Reg. No.: _____ DATE: _____	DESIGNED BY: _____ NAME: _____ Prof. Reg. No.: _____ DATE: _____

NOTES:
 THE ACCEPTANCE OF THIS PROVISION AND ANY OTHER PROVISIONS OF THIS DRAWING DOES NOT CONSTITUTE AN ACCEPTANCE OF LIABILITY OF ANY OF THE ENGINEERING CONSULTANTS INVOLVED.
 THE ENGINEER'S DESIGN IS TO BE USED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND STANDARDS SET OUT IN THE DRAWING. THE ENGINEER'S DESIGN IS TO BE USED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND STANDARDS SET OUT IN THE DRAWING. THE ENGINEER'S DESIGN IS TO BE USED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND STANDARDS SET OUT IN THE DRAWING.

PROJECT DESCRIPTION
RIVER CLUB ACCESS ROAD
LAYOUT PLAN AND LONGITUDINAL SECTION
MS TO MALTA ROAD

PROJECT NUMBER	DRAWING LOCATION DATA	START	END

SCALE: 1:1000
 SHEET 02 OF 03

Figure 15: Final Road Layout

Ecological Setbacks and Movement Corridors

The development will be set back from watercourses, and the interfaces between the development and adjacent freshwater ecosystems will be rehabilitated (the ecological setbacks), and a faunal movement corridor is provided through the development (the ecological corridor - see Figure 3 and Figure 4). Roads through ecological setbacks and the ecological corridor will incorporate box culverts to allow faunal movements (see Figure 8, Figure 10, Figure 11 and Figure 14).

Ecological setbacks will consist of a bank with a maximum slope of 1:5, planted with suitable wetland vegetation. Abutting this zone, and depending on the alternative selected (see below) would be a locally indigenous fynbos planted buffer strip, followed by park space with amenities such as pedestrian and cycle pathways, extensive tree planting and large lawned banks. Stormwater detention and treatment facilities will also be positioned in setbacks.

For the preferred development alternative / Riverine Corridor Alternative (see Figure 16) the western bank of the canal edge would be removed, and a stepped gabion wall would be installed on the eastern bank of the canal (see Figure 17). A buffer of between 10 and 40 m wide will be located to the west of the modified river course, including riverine vegetation (~22 m) at slope angles that will accommodate various flow levels and areas of refuge for fauna during high flows (see Figure 16 and Figure 17). The setback will also include a 7.5 m grassed bank with pockets of riverine vegetation, and walking and cycle trails (see Figure 17).

If the preferred development alternative is authorised, the original course of the Liesbeek River to the west of the development will be infilled. A stormwater swale would be retained, and a stormwater pipeline will be installed to direct stormwater from urban areas to the west (and the development itself) further north into the remaining channel of the original course of the Liesbeek, and ultimately the Black River. This infilled area will be lawned and trees will be planted, stormwater detention facilities will be located in this area, which will also serve as faunal refuges.

For development alternative 1 / Island Concept Alternative (Figure 19), the original course of the Liesbeek River west of the site would be rehabilitated on the River Club property, with the implementation of a 30 – 35 m ecological corridor, including sloped banks planted with wetland vegetation and locally indigenous fynbos (15 m) and a public realm (~20 m - see Figure 21). The public realm would include lawned areas, patches of riverine vegetation, stormwater abatement infrastructure, and foot and cycle paths. Under this alternative, the western bank of the canal edge would be retained and activated by the removal of portions of the canal wall, and the installation of gabion structures to enhance the faunal and floral habitat value of this fairly sterile freshwater environment (see Figure 20). Foot and cycling paths would be installed immediately west of the canal, and a strip of locally indigenous fynbos would be planted to the west of this path. A lawned public area is planned further to the west abutting buildings.

Landscaping and Open Space

Open spaces are intended for use by occupants of the development and their customers and/or guests as well as the public.

Provision is made for 6.8 ha of open space in a number of open space areas throughout the site. These areas will include a park (the ecological corridor), open spaces adjacent to boulevards along major access routes at the site and in the ecological setbacks abutting the Liesbeek and the Liesbeek Canal.

Soft landscaped areas will include tree-lined vehicular and pedestrian avenues, plazas and parking areas. Shrub, groundcover and lawns will be planted throughout the development to aesthetically soften buildings, walls and roads.

The following principles will apply to landscaping in ecologically important areas:

- Plants used in setbacks / buffer areas will be carefully selected with the help of the fresh water ecologist;
- Tree species may include some specimens originally found in the wider South African context;
- A locally indigenous planting palette will be used for all understorey planting, including lawns, which will be limited to Kweek or Buffalo (both hardy indigenous species); and
- Sustainable stormwater drainage systems will be landscaped with locally indigenous wetland plant species.

Maintenance of the extensive landscaping on the site will be for the responsibility of the Body Corporate / Developer.

Recreation and Leisure Facilities

Pedestrian and cycle paths will be provided in the ecological setbacks to the west and east of the site (see Figure 16, Figure 17, Figure 18, Figure 20 and Figure 21); and ecological setbacks and the ecological corridor will be open to the public for recreation and leisure use.

It is possible that additional applications will be made at a later stage for other infrastructure in aquatic areas, such as walkways / boardwalks, artificial islands for waterfowl and bird hides.

The existing bird hide (which is in a poor condition), driving range and mashie golf course will not be retained if approval for the development is granted.



Figure 16: Liesbeek ecological setbacks – Preferred Development Alternative

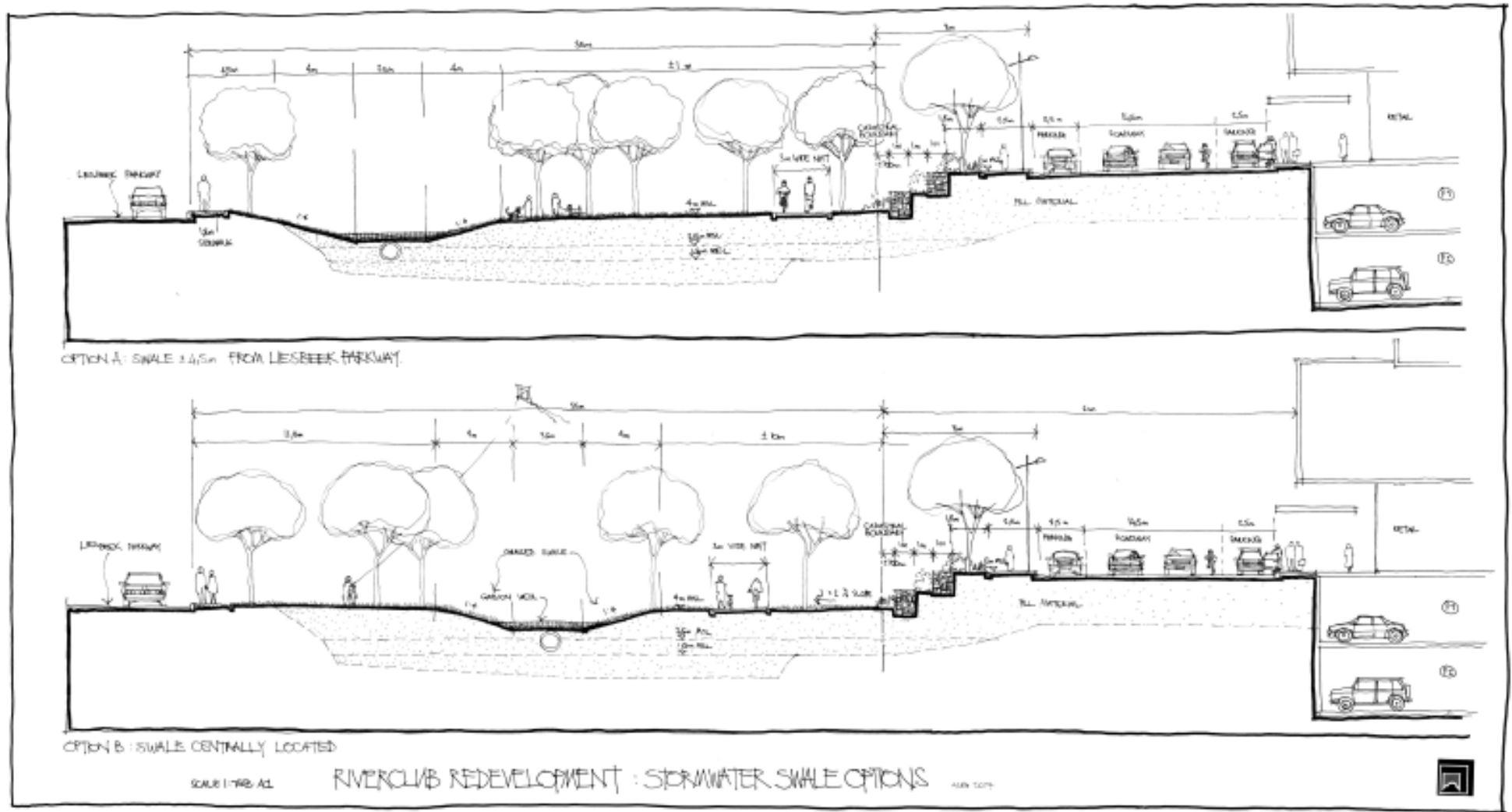


Figure 18: Original (degraded) course of the Liesbeek setback – preferred development alternative



Figure 19: Ecological Setbacks – development alternative 1

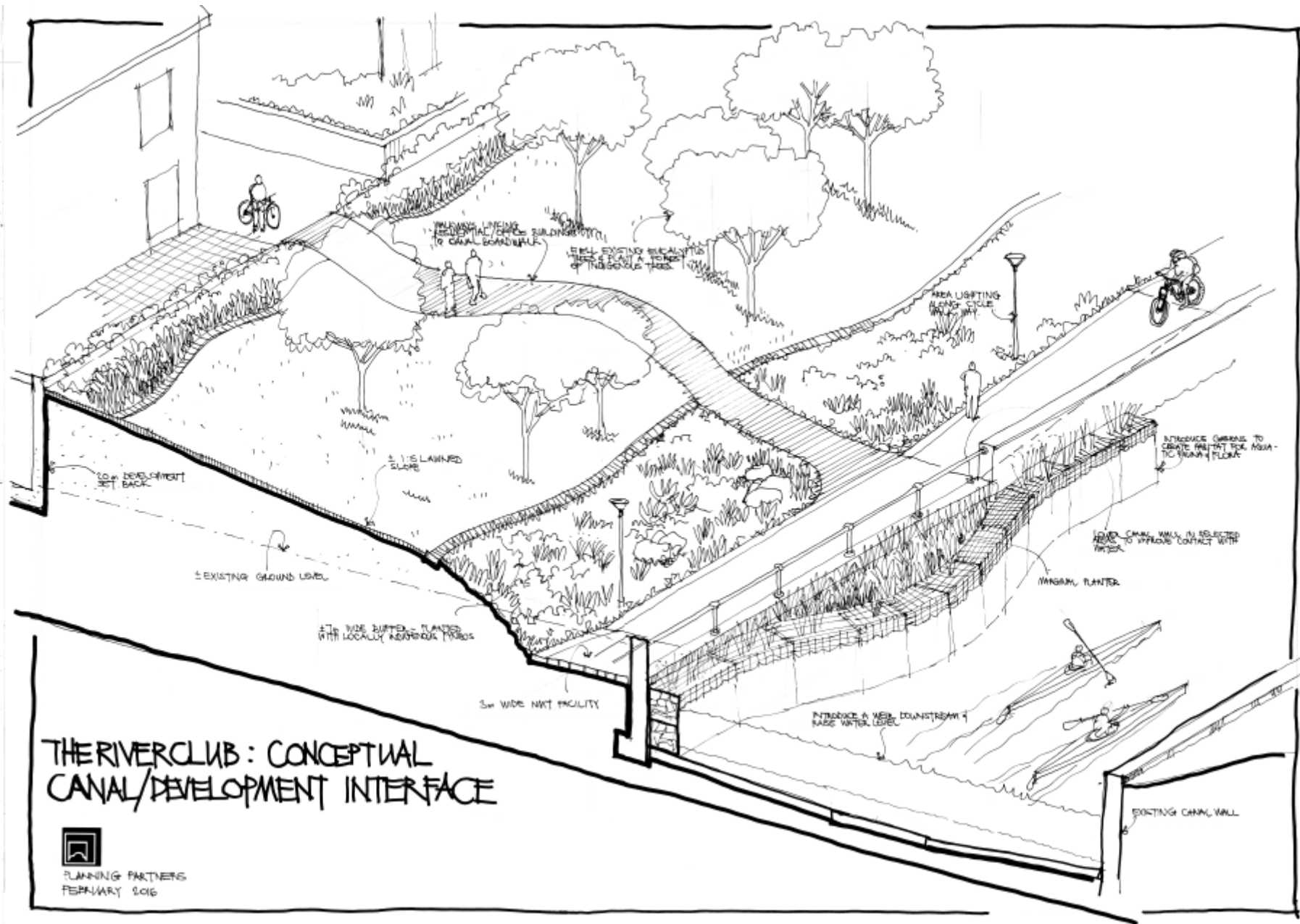


Figure 20: Canal ecological setback – development alternative 1

Water Supply Infrastructure

The site (and surrounding area) is supplied with potable water from the Molteno Reservoir. From this reservoir, a 450 mm diameter main pipe routed next to Liesbeek Parkway supplies water to Observatory and surrounding areas. The River Club, SAAO and the Valkenberg Hospital Complex are all currently supplied by a 110 mm diameter main pipe which branches off from the Liesbeek Parkway pipe.

No bulk infrastructure upgrades are required to service the development, and potable water supply can be drawn directly from the existing 450mm diameter main located within Liesbeek Parkway.

Assuming a minimum flow velocity of 0.7 m/s in the main pipe, a 200 mm diameter connection from the 450 mm main at Liesbeek Parkway will be required to supply potable water to the development.

A bulk metered connection will be provided at a suitable point near the entrance to the development in accordance with municipal standards.

Preliminary estimates indicate that an internal network comprising 200 mm and 150 mm diameter pipelines would be sufficient to service the development except for firefighting requirements. However, this can only be confirmed upon detailed modelling and the confirmation of fire flow requirement to buildings, and additional connections for water supply for fire-fighting purposes are being investigated. Water supply infrastructure will be installed within the basement structures (see Figure 22).

The network will be designed to supply domestic and fire-fighting demand whilst maintaining the necessary pressures and velocities as prescribed by the CoCT. The network design, pipe material and all fittings will be installed in accordance with municipal requirements and specifications.

Electrical Infrastructure

Maximum electrical demand at the development will be 10 MVA.

The present electrical mains supply to the site comprises a substation with an 11 kV connection to the CoCT Electricity Network, a local 11 kV Switch connected to a Power Transformer with a 400 V three-phase four-line output. The River Club premises are connected via a metered electricity supply to this 400 V "source".

The CoCT Electrical Department will install an 11 kV Bulk Mains Supply to the site, and the proponent will provide a 40m x 40m Main Step-Down Sub-Station (see Figure 3) installed with a capacity of 50 MVA above the 1:100 year floodline during the initial phase of development. The Main Step-Down Substation will have a surface footprint of approximately 1 600 m², and will stand approximately 4.8 m above ground/basement level.

It is proposed that electrical supply infrastructure be developed as two MV ring feed loops (one for each precinct – see Figure 23). Each building will be equipped with a dedicated power transformer and MV Switch Panel, and will be connected to one of the ring feed loops. It is also envisaged that at buildings where the electricity supply connection is ≤ 500 kVA, the mains connection will comprise a mini-sub-station (incorporating MV Switchgear, Power-Transformer and Main LV Switch). Each building will be connected to adjoining buildings via underground sleeves.

At this time the incoming Bulk MV Supply source is unknown, but it has been assumed that the incoming sleeves and electrical servitudes will be from the south and east sides of the development (see Figure 23).

Switch rooms will be located above the 1:100 year floodline. If necessary, these rooms will be sealed as a water-tight compartment such that floodwaters do not penetrate the room, with provision made for graded floors, drains and catch-pits with pumps available to ensure the space is flood resistant.

In order to supplement electrical supply, LLPT proposes to install solar panels on rooftops (see Figure 24). 330 Watt solar panels, angled at 15° to the horizontal and fitted in rows of four-panels per access-aisle (for cleaning and maintenance) will be fitted over $\leq 60\%$ of the available roof space. These panels will provide ≥ 2.0 -MW of total power to the site at peak-demand.

Solar panels will be connected in series 33 kW and 100 kW inverter sources, which will feed power to the LV side of individual building Main Distribution Panels. The Main LV Switch and the incoming solar supply will be monitored and managed by Dual-Source Smart Meters so that the electricity billing can be appropriately metered.

Stormwater Infrastructure

Since a large portion of the site is bounded by the Original Course of the Liesbeek River and Liesbeek Canal, very little (if any) overland flow from adjacent areas pass through the site, and therefore only stormwater generated at the site itself needs to be managed through the proposed stormwater system.

The River Club site is located within the floodplain and in order to permit development, the site will be raised to above the 1:100 year flood line. However, since the site is located within a floodplain and its surrounds are inundated even during low order storm events, attenuation of stormwater adds no significant value (i.e. will not prevent flooding) and thus the rate at which runoff is released from the development is irrelevant. A departure from the CoCT Stormwater Policy will therefore be requested. Requirements with respect to the quality of stormwater discharged from the site will be adhered to.

Currently the site drains towards the Liesbeek Canal to the east, and to the original course of the Liesbeek River to the west. Buildings at the development will be raised above the 1:100 year floodline, and the site will continue to drain to the east and west following the redevelopment.

In terms of stormwater quality, the developers are required to retain stormwater that would be generated on-site during a 1:0.5 year storm event over 24 hours, reduce suspended solids in stormwater retained on site by 80%, reduce the phosphate content of stormwater by 45% and trap litter and grease at pollutant sources.

In order to achieve these requirements, vegetated stormwater swales underlain by a piped drainage network will provide stormwater storage capacity (see Figure 25 and Figure 26), reduce flow velocities (lengthening the catchment response time and decreasing peak flows) and provide pre-treatment of stormwater through vegetation to remove coarse to medium sediments. Bioretention systems will be installed in trenches under the full length of all swales (see Figure 26). This bioretention system will remove finer particulates, nutrients and associated contaminants through fine filtration. Bioretention swales also provide flow retardation for frequent storm events.

Scouring will be reduced at outlets by ensuring the slope and hydraulic roughness of the overlying swale reduces flow velocities by creating shallow temporary ponding (i.e. extended detention) over the surface of the bioretention filter media via the use of check dams (where required).

In order to further reduce stormwater drainage from the development and save water, the following Sustainable Urban Drainage (SUD) Systems are proposed:

- Enhanced Liesbeek Canal;
- Bioretention and stormwater treatment systems; and
- Stormwater harvesting and water recycling systems.

Bulk Earthworks

The proposed project requires bulk earthworks, primarily to raise portions of the site above the 1 in 100 year floodplain, i.e. to ~ 5.4 mamsl (the 1 in 100 year floodplain has been calculated to be 4.81 mamsl, and a 600 mm factor of safety has been allowed for).

Approximately 260 000 m³ of imported fill material will be needed for the development. The fill material will be sourced primarily from commercial sources, and sorted and crushed builders rubble.

A geotechnical investigation has indicated that numerous soil improvement techniques to mitigate against poor bearing capacity and settlement will be required. In principle almost all structures will utilise piles.

During the construction, approximately 20 000 m³ of topsoil will be stripped from areas to be developed. As topsoil is contaminated with kikuyu grass it may not be possible to harvest this topsoil for rehabilitation and landscaping. If topsoil cannot be harvested for landscaping and rehabilitation this material will be imported from commercial sources.

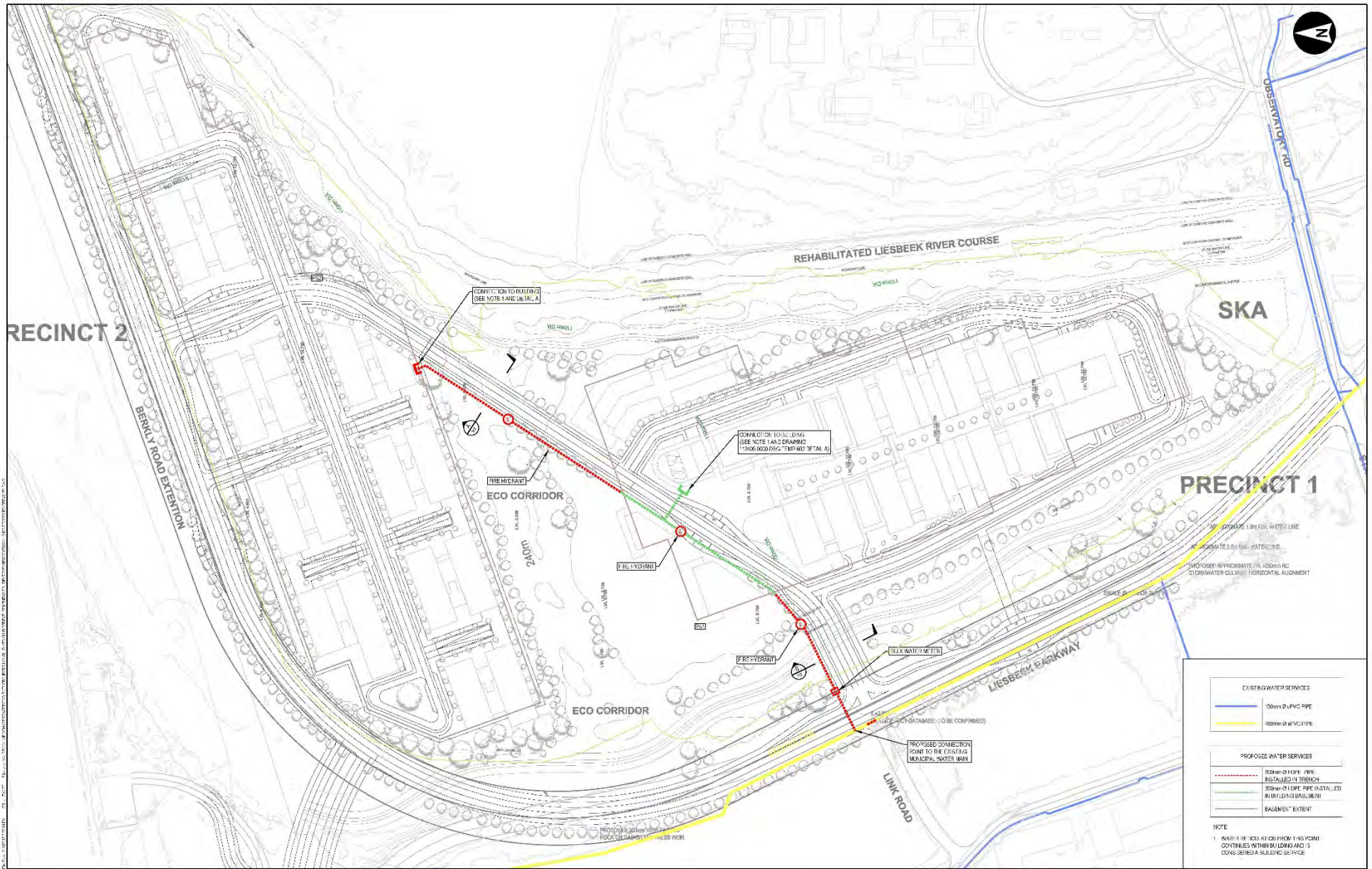


Figure 22: Water reticulation network

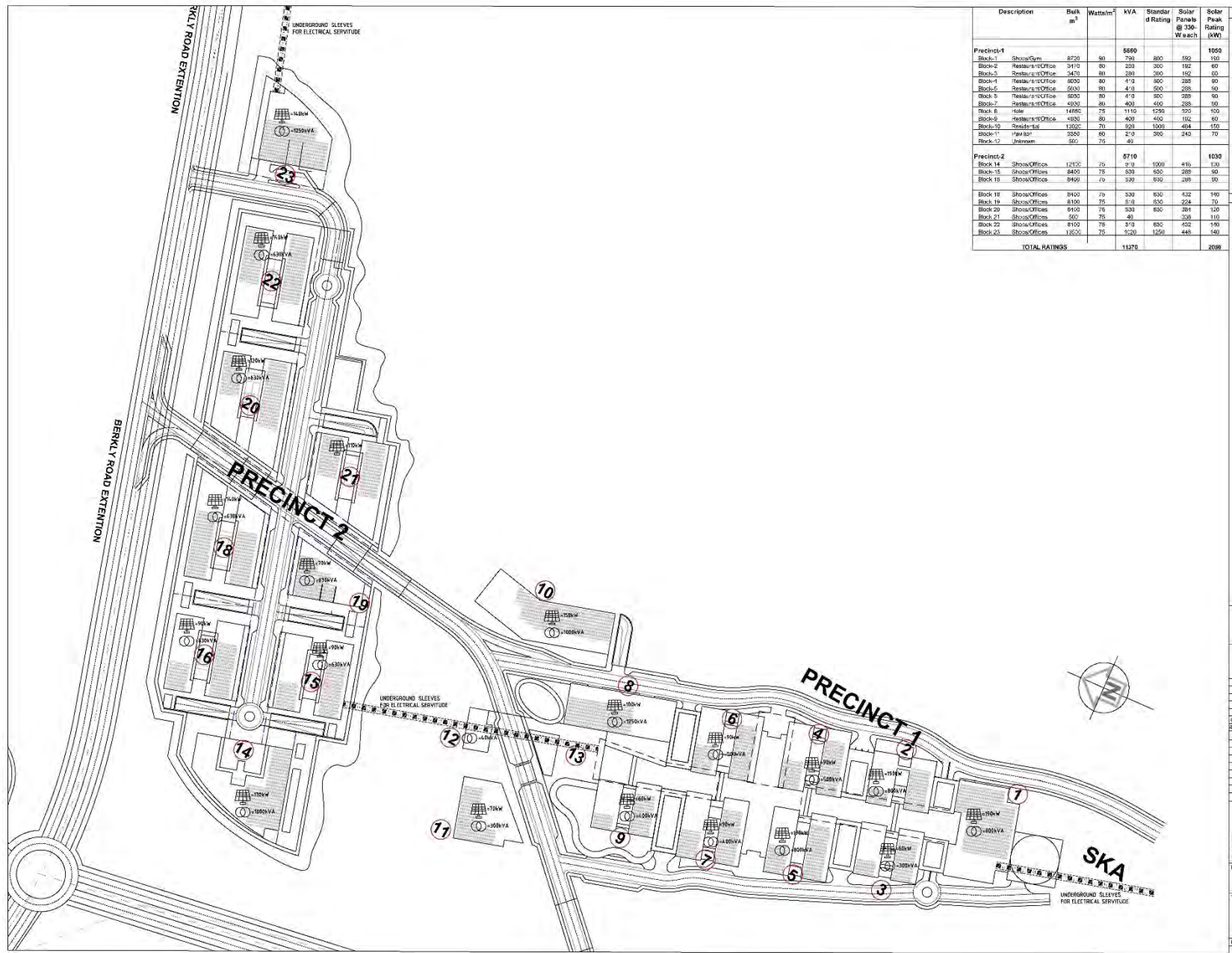


Figure 23: Electrical supply network

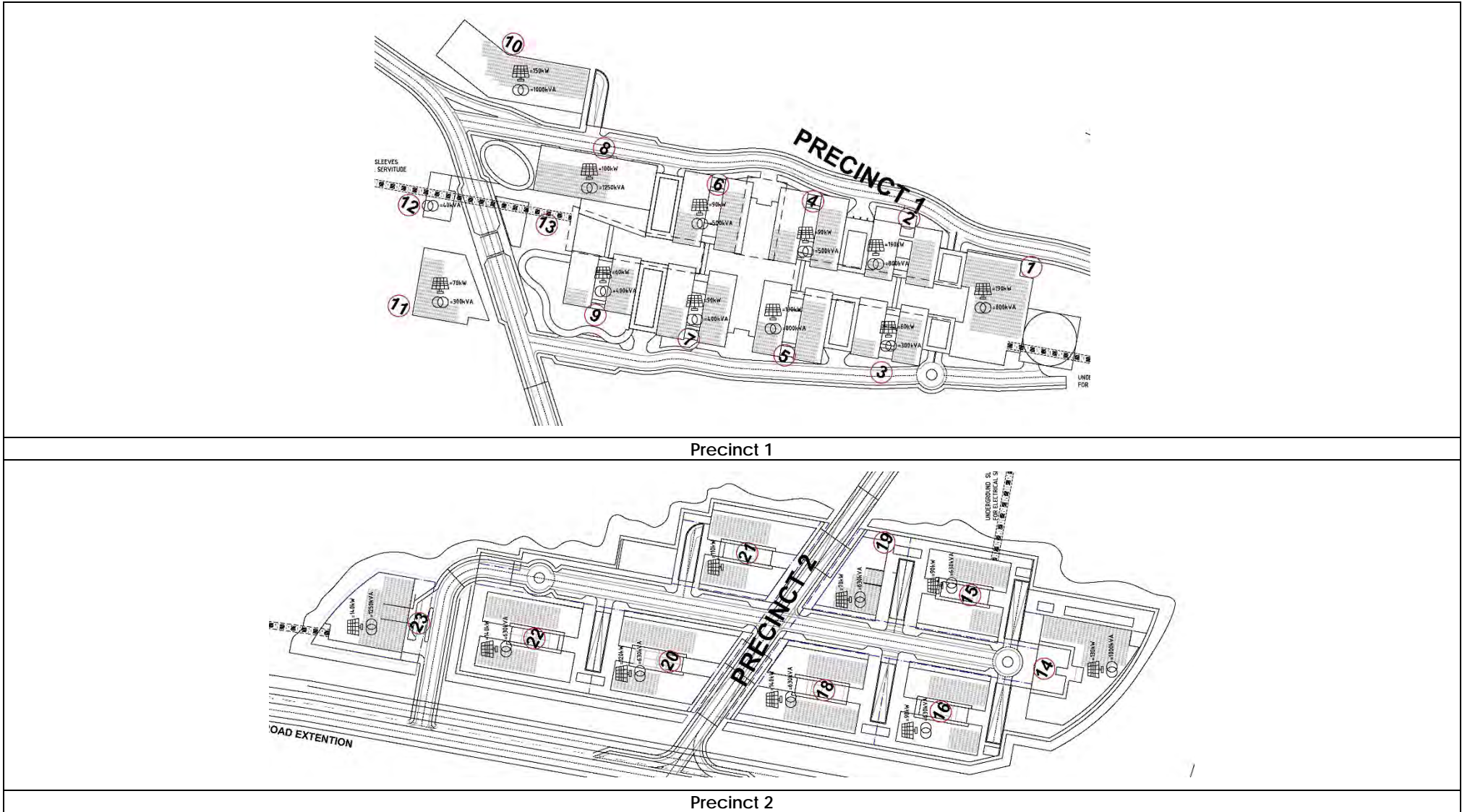


Figure 24: Solar Power Network

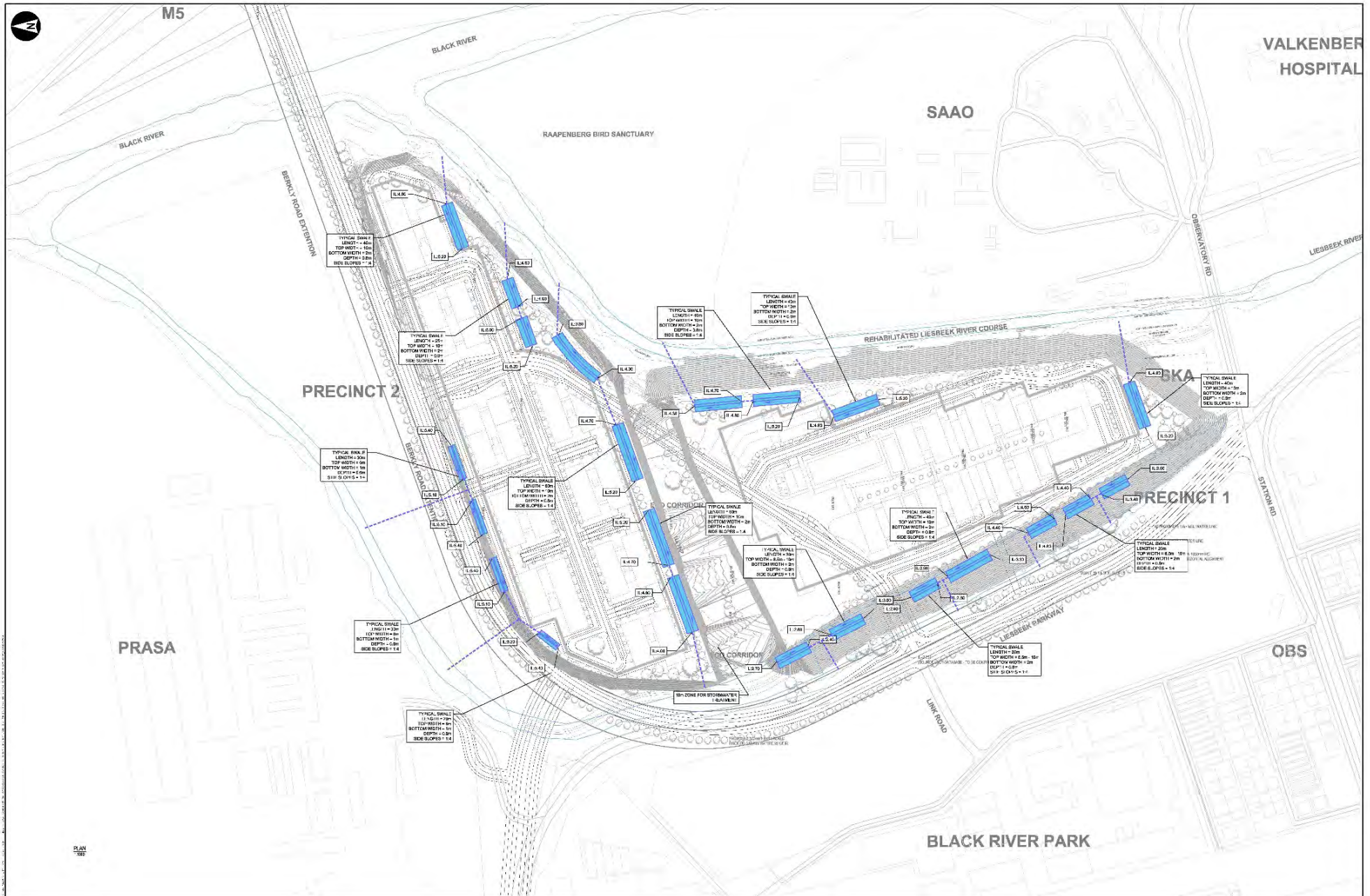


Figure 25: Stormwater network

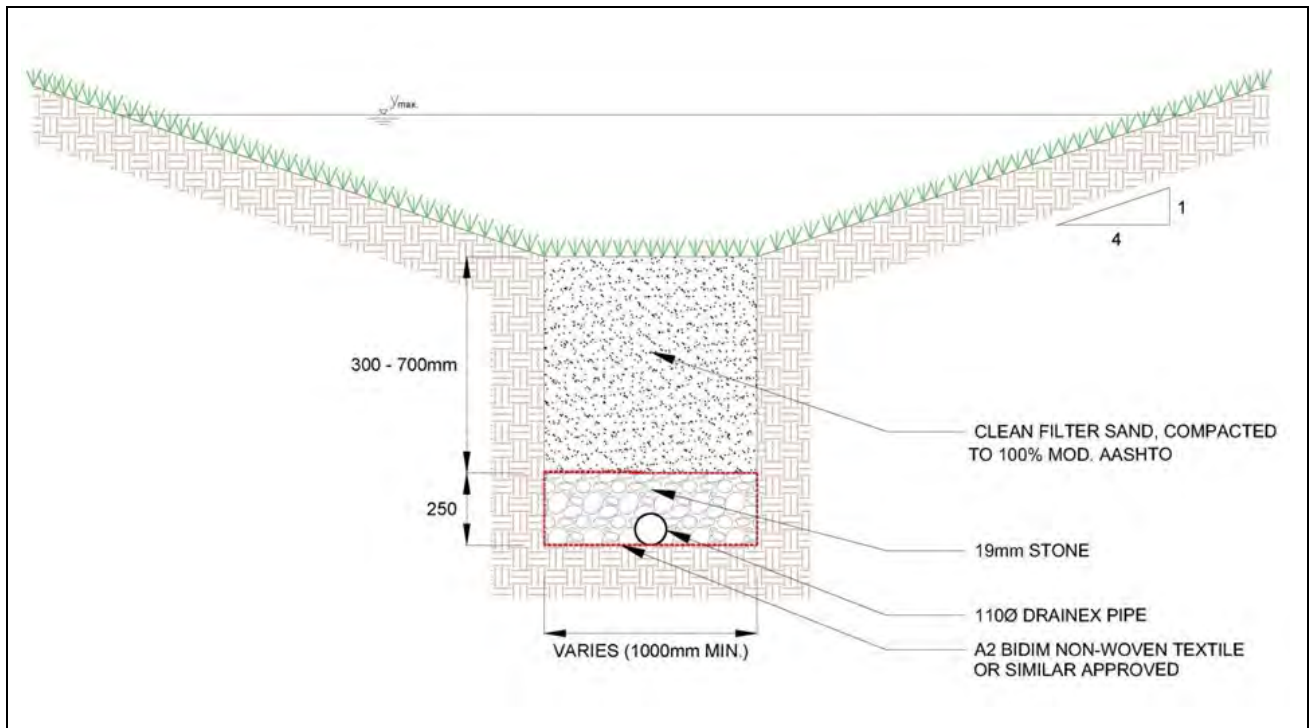


Figure 26: Vegetated swale

Processing activities (e.g., manufacturing, storage, distribution) Provide brief description below:	YES	NO
Storage facilities for raw materials and products (e.g., volume and substances to be stored) Provide brief description below:	YES	NO
Storage and treatment facilities for effluent, wastewater or sewage: Provide brief description below:	YES	NO
Sewerage		
Retail and restaurant effluent typically contains significantly more oils and fats. These facilities will be required to install grease traps at source. Other than the effluent from these facilities, domestic sewage will be reflective of a typical mixed-use development, and sewerage design has taken this into account.		
The development falls within the Athlone Waste Water Treatment Works (WWTW) drainage area and within the sub-catchment that drains sewage to the Raapenberg Pump Station. The Raapenberg Pump Station pumps sewage to Athlone WWTW. Currently a 225 mm diameter main pipe in Observatory Road (see Figure 27) services the River Club as well as the SAAO and the Valkenberg Hospital Complex. This pipe crosses into Station Road before routing into Ossian Road (see Figure 1). A bulk sewer main, ranging in size from 900 mm to 1 050 mm diameter, is also located to the west of the River Club. This pipe follows Fir Street, Station Road and Florence Avenue before discharging into the Raapenberg Pump Station (see Figure 1 and Figure 27).		
In order to service the development, a 200 mm diameter gravity main network, a manhole and a pump station will be installed in each precinct (see Figure 27). Sewage will be pumped from Precinct 2 to the pump station at Precinct 1 (see Figure 27).		
The existing 225 mm diameter main located in Observatory Road will not have sufficient capacity to serve the development. Furthermore, this existing connection is located at the south of the site, and a gravity fed network across the site draining to this point will not be practical. Therefore, sewage will be pumped from Precinct 1 to a new break pressure man hole in Station Road in a 160 mm diameter pipeline. A 200 mm diameter gravity main will be installed from this man hole across Liesbeek Parkway to discharge sewage into an existing 900 mm sewer main on Liesbeek Parkway (see Figure 27).		
The Average Dry Weather Flow (ADWF) for the development is estimated at 640 kl/day which equates to an instantaneous flow of 7.41 l/s. The Peak Dry Weather Flow (PDWF) is estimated at 26.6 l/s and when considering an infiltration rate of 15% the Peak Wet Weather Flow (PWWF) is estimated at 30.59 l/s.		
In terms of wastewater treatment the CoCT is currently installing a 3 rd diversion main from the Athlone WWTW to the Cape Flats WWTW so that flows during peak times can be diverted to Cape Flats WWTW thus creating additional capacity required for the development.		

<p>Once the new diversion main is installed at the WWTW there will be sufficient capacity to receive sewerage from the development, however, the conveyancing network (specifically the Raapenberg Pump Station) will not have sufficient capacity to receive sewage from the development during peak periods.</p> <p>Although sufficient treatment capacity exists, due to capacity constraints, a PDWF of 16 l/s only can be accommodated by the current network, and the full PDWF can only be accommodated once the gravity mains have been upgraded (which is likely to occur within the next five years).</p> <p>Pump stations will therefore include holding tanks with a capacity of 435 m³ (see Figure 28) to store 12 hours of accumulated sewage so that it can be pumped into the municipal system during off-peak periods. The holding tanks and pump stations will be installed in basements of buildings (see Figure 27 and Figure 28).</p>		
Storage and treatment of solid waste Provide brief description below:	YES	NO
<p>Each building will have a temporary waste collection and storage area, as well as a waste pick-up point. Where practical, waste will be sorted and recyclable waste will be recycled. All other waste will be sent to licensed waste disposal facilities.</p> <p>Waste treatment will not take place at the site.</p>		
Facilities associated with the release of emissions or pollution. Provide brief description below:	YES	NO
<p>No industrial facilities are anticipated, and no facilities are anticipated to generate emissions or pollution (other than waste and sewage, as described above).</p>		
Other activities (e.g., water abstraction activities, crop planting activities) – Provide brief description below:	YES	NO
<p>None</p>		

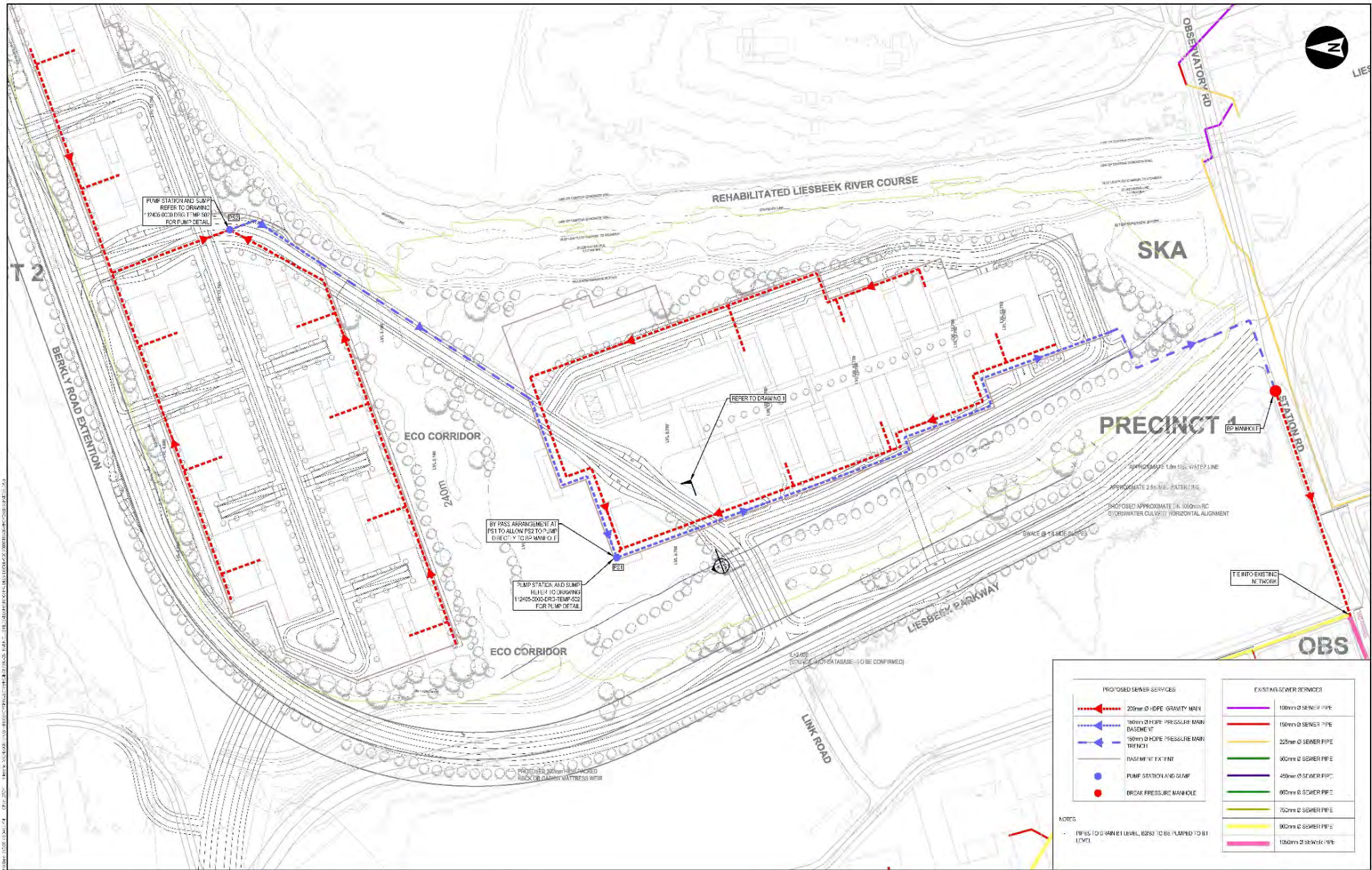


Figure 27: Sewerage

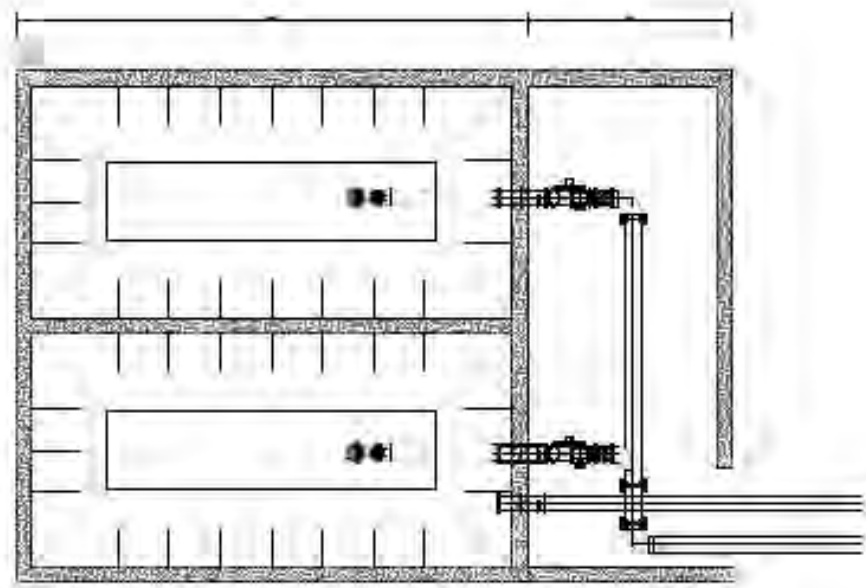
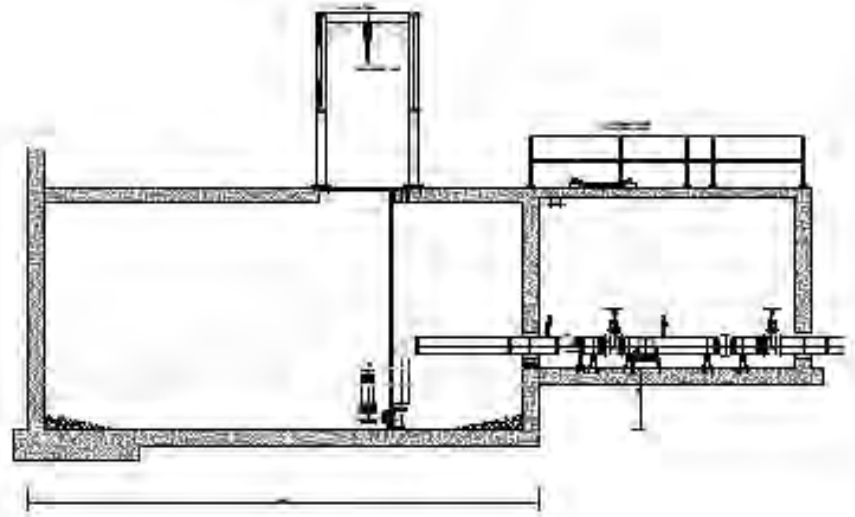


Figure 28: Pump Station Design

3. PHYSICAL SIZE OF THE PROPOSED DEVELOPMENT

(a) Property size(s): Indicate the size of all the properties (cadastral units) on which the development proposal is to be undertaken	151832	148 425	m ²
	26426	5 092	m ²
	108936	134	m ²
	26427	509	m ²
	15326 Rem	208 981	m ²
	26169	18 900	m ²
	26170	2 072	m ²
	26171	2 024	m ²
	26172	2 043	m ²
	26173	2 006	m ²
	26174	3 812	m ²
	26175	3 840	m ²
(b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken	N/A		m ²
(c) Development footprint: Indicate the area that will be physically altered as a result of undertaking any development proposal (i.e., the physical size of the development together with all its associated structures and infrastructure)	~210 000		m ²
(d) Size of the activity: Indicate the physical size (footprint) of the development proposal	~210 000		m ²
(e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal			
(f) For storage facilities: Indicate the volume of the storage facility (sewage storage facilities – total volume in both facilities)	435		m ³
(g) For sewage/effluent treatment facilities: Indicate the volume of the facility (Note: the maximum design capacity must be indicated)			

4. SITE ACCESS

(a) Is there an existing access road?	YES	NO
(b) If no, what is the distance in (m) over which a new access road will be built?	See below	

(c) Describe the type of access road planned:

Access to the site is currently from Observatory Road in the south of the site (see Figure 1). This access will be used to allow emergency access in the short term. In future, this access will provide a physical connection to future TRUP developments, and possibly as a service entrance to the River Club.

During the initial phase of development, a ~530 m long, two-lane link road (including crossing over the original course of the Liesbeek River into the development – see Figure 8) and a ~450 m two-lane extension of Berkley Road (from east of the site, including a ~80m long bridge over the Black River – see Figure 10) are proposed to provide access to the development. The new internal Link Road and the partial (two lane) Berkley Road extension will provide access to the site during all phases of development and into the future.

At a later stage, the CoCT will widen the Berkley Road extension (including widening the bridge over the Black River) and extend Berkley Road to Malta Road / Liesbeek Parkway over the original course of the Liesbeek River.

Please note: The position of the proposed access road must be indicated on the site plan.

5. DESCRIPTION OF THE PROPERTY(IES) ON WHICH THE LISTED ACTIVITY(IES) ARE TO BE UNDERTAKEN AND THE LOCATION OF THE LISTED ACTIVITY(IES) ON THE PROPERTY

5.1 Provide a description of the property on which the listed activity(ies) is/are to be undertaken and the location of the listed activity(ies) on the property, as well as of all alternative properties and locations (duplicate section below as required).

The site is located in the suburb of Observatory in Cape Town (see Figure 1) and consists of the properties listed in Section A1 and indicated in Figure 2. The site is bordered to the west and north-west by the (former) natural channel of the Liesbeek River (the original course of the Liesbeek River), and to the east by the Liesbeek River Canal and the Black River (see Figure 30). The site therefore forms an “island” surrounded by these freshwater systems and is positioned in the floodplain of the Black and Liesbeek Rivers. The majority of the site is owned by the proponent; however, a number of other entities also own various smaller portions of the site (see Section A1).

The following activities will take place partially on land that is not owned by the proponent:

- The extension of Berkley Road (including a bridge over the Black River and a crossing over the original course of the Liesbeek River): Erf 15326 Rem
- The widening of the Berkley Road bridge at some stage in the future by the CoCT: Erf 15326 Rem
- The construction of Link Road into the development across the original course of the Liesbeek River: Liesbeek Parkway Road Reserve, Erf 26169
- The widening of the Liesbeek Parkway between Station Road and Malta Road: Liesbeek Parkway Road Reserve, Erf 26169, Erf 26170, Erf 26171, Erf 26172, Erf 26173, Erf 26174 and Erf 26175
- Infilling or rehabilitating the original course of the Liesbeek River west of the development: Liesbeek Parkway Road Reserve, Erf 108936, Erf 26427, Erf 26169, Erf 26170, Erf 26171, Erf 26172, Erf 26173, Erf 26174 and Erf 26175.
- Rehabilitating, restoring or upgrading the western banks of the Liesbeek canal, east of the development: Erf 151832, Erf 26426 and Erf 15326 Rem

The site is located in a strategically important location within the City – it is a highly accessible site in close proximity to agglomerated places of work such as the CBD, the Voortrekker Road activity corridor and Paarden Eiland, and is also within relatively close proximity to the metropolitan south-east. The site also falls on the north-western edge of TRUP.

The Black River and M5 motorway have historically been barriers between communities to the east and west of the river banks, and the area around the river has become an unattractive edge, derelict and inaccessible to pedestrians (this includes the current access to The River Club along Observatory Road). This is largely due to the presence of two high security institutions (Valkenberg Hospital and the SAAO), and limited public access to and through the River Club site and to the east of the Black River and the M5.

The site is currently predominantly used by the proponent as a commercial rental enterprise with tenants comprising a golf driving range with a “mashie” 9-hole golf course in the north-east of the site, conference and function venue, restaurant and bar, and other tenants (see Figure 29). A bird hide (that is currently in a poor state of repair) is located on the site which overlooks the new Liesbeek River channel and current confluence with the Black River. Beyond the mashie course is vacant land owned by the Passenger Rail Agency of South Africa (PRASA).

The River Club building (the main building), built in 1939, has been converted into a recreational and conference facility. A number of surrounding buildings on the property are rented to businesses for commercial use. The River Club parking area is to the south of the building, and the main access to the River Club is from the south off Observatory Road (see Figure 29).

Undeveloped portions of the site are mostly grassed (lawn) or open ground, with scattered trees. Dense reed beds are located on the eastern edge of the site along the Black River. Cape Flats Dune Strandveld, Cape Flats Sand Fynbos and Peninsula Shale Renosterveld would historically have occurred at the site. However, other than the interfaces with the Black and Liesbeek Rivers, the site is now transformed from an ecological perspective.

Liesbeek Parkway (south), Albert Road (north-west) and Station Road (west) provide access to the site (see Figure 30). Although the M5 runs almost parallel to the eastern boundary of the site, access from the M5 is not currently possible.

Coordinates of all the proposed activities on the property or properties (sites):	Latitude (S): (deg.; min.; sec)			Longitude (E): (deg.; min.; sec.)		
	33 °	55 '	58.20 "	18 °	28 '	28.18 "

Note: For land where the property has not been defined, the coordinates of the area within which the development is proposed must be provided in an addendum to this report.